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ERP Localization in Cross-Border Expansion: The Italian Case

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Elenco delle figure

Capitolo 1

Introduction

In recent years, the convergence of economic globalization and digital transformation has made the localization of enterprise information systems an increasingly important topic. Multinational companies operating worldwide often face the challenge of adapting their management systems to the diverse regulatory, cultural, and technological frameworks of the countries where they operate. In this context, Enterprise Resource Planning (ERP) systems are essential for maintaining operational efficiency, ensuring regulatory compliance, and integrating business process integration, serving as a vital infrastructure for managing international complexity.

The localization phase of an ERP system - that is, adapting it to the specific requirements of a local market - is a strategic yet often underestimated element in global rollout projects. In particular, the Italian context presents a series of unique features - especially regarding fiscal, accounting, and bureaucratic requirements - that make this process especially complex. Ensuring alignment with Italian regulations, such as mandatory e-invoicing, environmental contributions like those from CONAI and mechanism like split payment, is not merely a technical task but a crucial factor in the success or failure of the entire ERP implementation.

The motivation for exploring this topic arises from the increasing strategic importance of ERP localization in digital transformation efforts, as well as from the firsthand experience gained during a curricular internship at Arcwide, a company specializing in implementing the **IFS (Industrial Financial System)** ERP system. The internship offered an opportunity to directly experience the challenges of localizing the Finance module for the Italian market, providing a practical and applied perspective on the subject...

1.1 Objectives of the Thesis

The main objective of this thesis is to analyze how international multinational companies can effectively adapt their ERP systems to the Italian context, with a specific focus on the IFS system and the role of ERP consultants in managing localization processes. From an interdisciplinary perspective, this research aims to:

- Examine the concept of ERP localization in international rollout strategies;
- Highlight the technical and regulatory specificities of the Italian market;
- Analyze the architecture of the IFS system, with a focus on the Finance module and its localization capabilities;
- Explore the role of the ERP consultant in localization projects;
- Present a real-world case study - provided by Arcwide - on the localization of an ERP system in Italy, assess its organizational, technological, and performance impacts;
- Offer critical insights and practical recommendations for improving ERP rollout strategies in the Italian market.

1.2 Structure of the Thesis

This thesis is divided into seven chapters, in addition to the introduction and conclusion.

- Chapter 2 presents the theoretical framework, analyzing multinational internationalization strategies, the concept of localization, and the role of ERP systems in global business processes. The research gap that justifies the present case study is also outlined.
- Chapter 3 focuses on the Italian context, highlighting the main fiscal, accounting, and regulatory peculiarities that impact ERP configuration. It also analyzes the technological challenges and the current state of ERP adoption in the Italian companies.
- Chapter 4 is dedicated to the IFS ERP system, describing its architecture, core modules - especially the Finance module - and its customization and localization functionalities. A comparison with other leading ERP systems (e.g, SAP, Oracle) is also included.
- Chapter 5 introduces Arcwide, outlining its structure, mission, and operating model as a joint venture between IFS and BearingPoint. The role of ERP consultants in localization projects is also discussed.
- In Chapter 6, the internship experience at Arcwide is presented, including description of the activities carried out, tools used, issues encountered, and

solutions adopted, with a specific focus on the localization of the Finance module for the Italian market.

- Chapter 7 presents a real-world case study of a multinational company that carried out an ERP localization project in Italy. The chapter analyzes the client's context, functional requirements, localization tasks completed by Arcwide, and the resulting process and system changes - illustrated through BPMN diagrams. Final outcomes and key lessons learned are also discussed.
- The conclusions summarize the key findings, highlight the contibutions to both practice and theory, outiline the limitations of the research, and suggest avenues for future research in the field of ERP localization and enterprise digital transformation.

Capitolo 2

Theoretical Framework and Research Gap

2.1 Multinational Enterprises and Internationalization Strategies

Bartlett and Ghosal (1989) classify multinational enterprise (MNE) strategies into four distinct categories - global, international, multinational and transnational - each representing a different equilibrium between the need for global integration and the demand for local responsiveness. As illustrated in **Figure 2.1**, these strategies are positioned along two fundamental dimensions: the pressure to reduce costs and the pressure to adapt to local market conditions.

Organizations pursuing a global strategy tend to centralize decision-making and standardize processes to achieve economies of scale, while those following a multidomestic strategy grant significant autonomy to subsidiaries in order to tailor products and operations to national contexts. The international strategy maintains a moderate degree of control from headquarters, transferring core competencies abroad but allowing limited local flexibility. The transnational strategy, on the other hand, seeks to integrate the advantages of both efficiency and adaptability, enabling the enterprise to coordinate globally while remaining responsive to local differences. This conceptual framework is particularly relevant for the study of information systems, as the strategic positioning of a firm directly influences how digital infrastructures, such as ERP platforms, are designed, standardized, and localized across multiple subsidiaries.

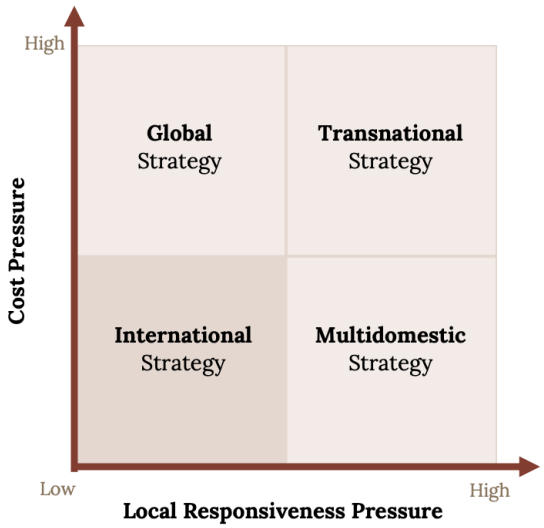

Figura 2.1: Matrix of Bartlett and Ghoshal's Four Strategies

2.2 The Concept of Localization: Cultural, Regulatory and Technological Aspects

Localization involves adapting a company's products, services and internal systems to meet the specific requirements of a given geographic or cultural market. Unlike globalization, which emphasizes standardization and uniformity, localization seeks alignment with national laws, languages, cultural norms and technological infrastructures.

As shown in **Figure 2.2**, localization can be conceptualized as a multilayered process composed of cultural, regulatory and technological dimensions. At the top of the pyramid lies cultural adaptation, which ensures that organizational practices reflect the host country's values and working norms. Hofstede's cultural dimensions (Hofstede, 1984) are often applied to analyze variations in power distance, uncertainty avoidance, individualism, and masculinity - elements that influence communication, decision-making and hierarchical structures.

The legal and regulatory layer represents the compliance requirements imposed by national authorities. For instance, Italy mandates electronic invoicing (fattura elettronica), environmental contributions such as CONAI, and mechanisms like split payment for transactions involving public administrations. Failure to adhere to these obligations can result in financial penalties and operational disruptions, underscoring the critical role of compliance in succesful localization.

The technological layer reflects the heterogeneity of IT infrastructures across countries. Some regions benefit from mature digital ecosystems and favorable cloud

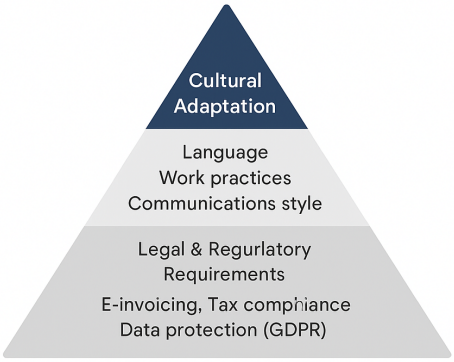

Figura 2.2: Pyramid of Localization Layers

regulations, whereas others face limitations caused by data sovereignty laws or legacy systems. These differences must be carefully evaluated when deploying enterprise systems, as they determine the degree of customization required to achieve a balance between global standardization and local responsiveness.

2.3 ERP Systems: Definition, Evolution, and Role in Business Processes

Enterprise Resource Planning (ERP) systems are unified software platforms that centralize and automate essential business functions such as finance, procurement, human resources, manufacturing, and supply chain management. They enable real-time data access and process standardization, thereby enhancing organizational efficiency and strategic flexibility.

As illustrated in **Figure 2.3**, the evolution of ERP systems can be traced across several major technological milestones. The earliest form, known as Material Requirements Planning (MRP), emerged in the 1960s to assist manufacturers in scheduling and inventory control. During the 1980s, this concept expanded into Manufacturing Resource Planning (MRP II), integrating production scheduling with financial capacity planning. By the 1990s, ERP systems evolved into comprehensive, organization-wide solutions capable of managing cross-functional processes within a single digital environment.

The subsequent phase, referred to as ERP II, introduced functionalities such as Customer Relationship Management (CRM), Supplier Relationship Management (SRM), and Business Intelligence (BI), extending the system's scope beyond internal operations to include partners and customers. The most recent generation, ERP III, integrates cloud computing and artificial intelligence to deliver enhanced mobility,

predictive analytics, and ecosystem interoperability (Jacob and Weston 2007). This progression highlights the shift from process automation to data-driven decision support and strategic integration across the enterprise landscape.

Deployment models now vary according to organizational structure and strategic objectives. On-premise ERP systems offer a higher degree of control and data sovereignty but require significant infrastructure and maintenance resources. Conversely, cloud-based solutions provide scalability, faster implementation, and lower initial costs. Hybrid models combine both paradigms, balancing flexibility with compliance. The selected deployment approach directly influences not only implementation costs but also localization capabilities and adherence to national regulations.

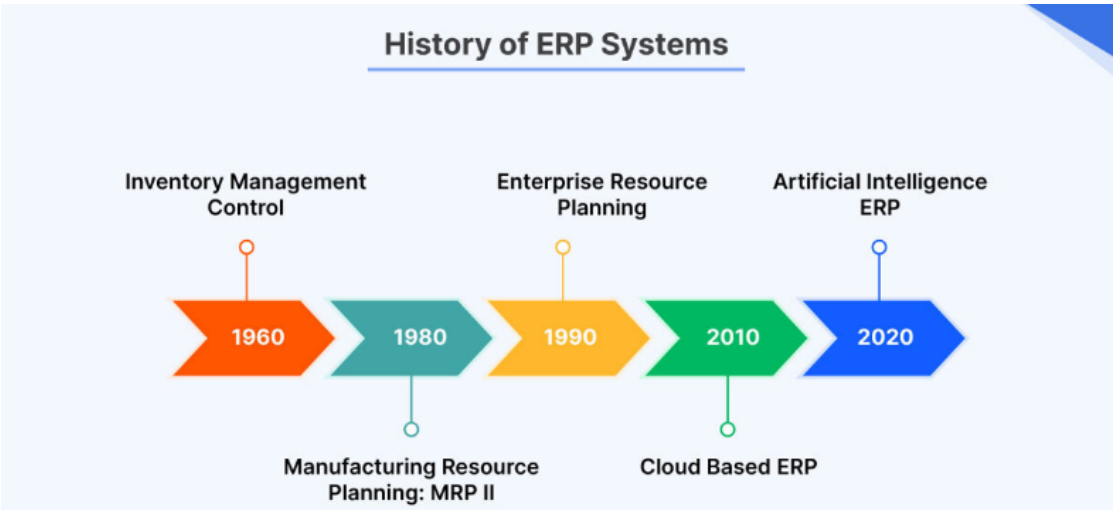

Figura 2.3: Timeline of ERP Evolution: MRP to ERP III

2.4 The Concept of ERP Localization in International Rollouts

ERP localization involves adapting enterprise software to comply with the specific legal, linguistic, fiscal, and cultural requirements of each country. This process typically encompasses translation into local languages, incorporation of national tax codes, alignment with domestic currency formats, customization of invoice layouts and payroll systems, as well as the generation of statutory and fiscal reports in line with national standards.

When multinational enterprises expand their operation, the rollout of ERP system across subsidiaries can follow different strategic approaches. The main approaches identified in the literature include:

- **Big Bang**: the simultaneous deployment of the new system across all business units.
- **Phased Rollout**: a sequential implementation by geographical region or by functional area.
- **Pilot Implementation**: an initial deployment in a controlled environment, typically within a single subsidiary or department, before extending to the wider organization.
- **Parallel Rollout**: the concurrent use of both legacy and new systems for a defined period, allowing gradual adoption while maintaining business continuity.

Each approach entails trade-offs in terms of risk, speed, cost and resource allocation (Nah, Lau and Kuang, 2001). The localization complexity increases with the number of countries involved, requiring robust project governance and effective coordination between local and global teams.

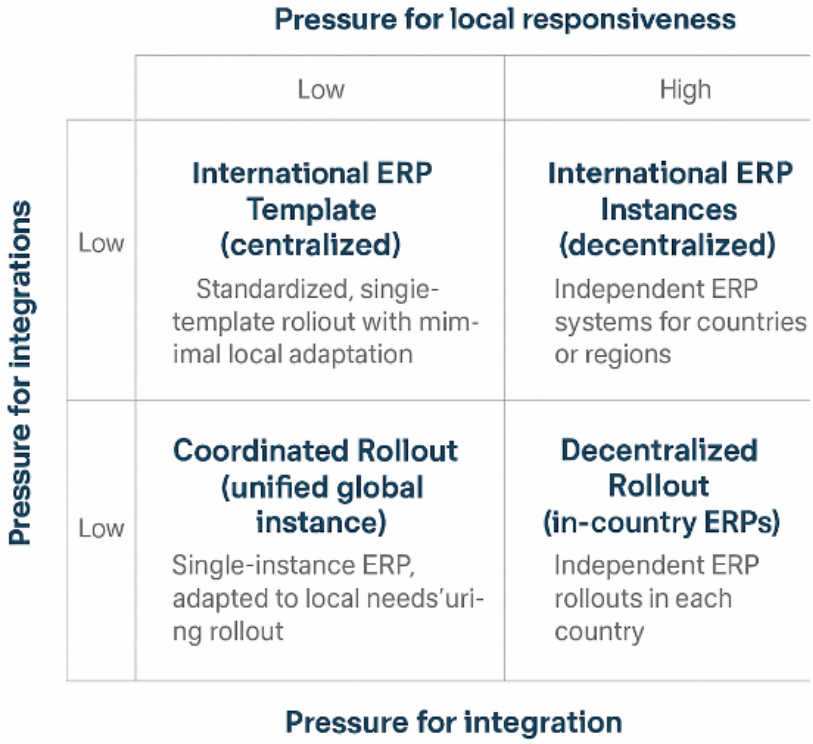

Figura 2.4: Matrix Comparing ERP Rollout Strategies

As depicted in **Figure 2.4**, the choice of rollout model depends largely on the balance between the pressure for global integration and the need for local responsiveness. Firms operating in environments with low local adaptation pressure often opt for international ERP templates, which allow a centralized rollout with limited localization. Conversely, organizations facing diverse legal and operational contexts may adopt decentralized instances, where each country maintains its own ERP configuration. Intermediate solutions include coordinated rollouts, which balance standardization and flexibility through a unified global system adapted to local needs, and decentralized rollouts, characterized by separate, in-country implementations.

In practical terms, ERP vendors seek to address these challenges through the delivery of country-specific localizations. Arcwide, in collaboration with IFS, provides a concrete example: The IFS Cloud platform currently supports localization in over 40 countries, embedding legal and fiscal adaptations tailored to individual markets such as Italy, Germany, France and Brazil. These localizations evolve continuously through regular release cycles, ensuring that clients remain compliant with dynamic legislative frameworks. This perspective underscores that ERP localization is not a static configuration task but a continuous process of adaptation and alignment with both regulatory changes and business practices.

2.5 The Role of Information Systems in Integration and Compliance

Information Systems (IS) play a crucial role in facilitating business integration and ensuring regulatory compliance across different jurisdictions. By integrating data flows and standardizing processes, ERP systems enable multinational companies to coordinate and monitor their operations across multiple regions with a unified and consistent approach.

As represented in **Figure 2.5**, ERP platforms function as the central infrastructure linking diverse business functions - ranging from finance, procurement, and logistics to human resources and production - within a single, coherent framework. This architecture supports data consistency, enhances cross-functional collaboration, and provides end-to-end visibility throughout global supply chains. Such integration is particularly crucial in the financial domain, where the real-time consolidation of accounts, currency conversion, and intercompany transactions are essential for accurate and timely reporting.

From a compliance standpoint, ERP systems embed automated controls to enforce regulatory standards, generate audit trails, and adapt to the specific fiscal and reporting requirements of each country. Modules dedicated to compliance -

Figura 2.5: ERP's role in Global Compliance and Integration

such as SAF-T (Standard Audit File for Tax) or e-invoicing - are indispensable in a highly regulated context like Italy, where legislative frameworks evolve continuously.

The practical application of these principles is exemplified by the Italy Country Solution (24R2) developed by Arcwide within IFS Cloud. This localized configuration includes integrated features such as SDI connectivity for e-invoicing, VAT registers, Black List transaction management, withholding tax automation, and environmental contribution tracking (e.g., CONAI). Through these functionalities, Arcwide demonstrates how ERP systems can embed localized compliance mechanisms directly within standard modules, allowing multinational enterprises to achieve both global integration and full alignment with national regulations.

2.6 Literature Gap and Relevance of the case Study

Although extensive literature exists on ERP implementation, there remains a notable lack of research specifically examining the challenges of ERP localization, particularly within the Italian context. Most academic contributions concentrate on technical deployment, change management, or post-implementation evaluation, while the interaction between localization efforts and regulatory compliance has received considerably less attention.

As illustrated in **Figure 2.6**, the literature gap emerges at the intersection of three major research domains: ERP systems, localization processes, and case study analysis. While the first two areas have been widely explored independently, very few studies integrate them through empirical research, particularly from the perspective of consultancy practices. This absence highlights the need for applied investigations that combine theoretical insights with practical evidence from real-world localization projects.

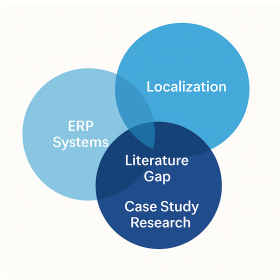

Figura 2.6: Overview of the Literature Gap in ERP Localization

Italy represents an especially relevant environment for this type of analysis due to its intricate fiscal structure, bureaucratic complexity, and the coexistence of small and medium-sized enterprises alongside large multinational corporations. The country's mandatory digital requirements, such as e-invoicing and environmental levies (e.g. CONAI), further increase the relevance of studying localization mechanism and compliance management.

A comparison of existing sources, presented in **Figure 2.7**, reinforces this observation. Academic literature predominantly focuses on organizational and managerial aspects, whereas vendor documentation provides deeper coverage of technical and functional elements such as tax configuration, payroll, procurement, and financial reporting. This divergence reveals a fragmentation between theoretical frameworks and the operational realities faced by consultants and ERP implementers.

Comparison of Localization Coverage in Academic vs. Vendor Sources

Localization areas	Academic sources	Vendor
Financial reporting	●	●
Tax calculation	●	●
Payroll	●	●
Employment	●	●
Procurement	●	●
Production	●	●
Sales	●	●
Inventory	●	●
Master data	●	●

Figura 2.7: Academic vs Vendor Sources

This present thesis aims to address this gap by analyzing the localization of IFS ERP in Italy through a real-world case conducted by Arcwide. The study seeks to connect academic discussion with field application, proposing recommendations for improving ERP rollout strategies in complex regulatory environments. Although Arcwide provides dedicated country solutions and tools to support localization, there is limited academic research that evaluates their effectiveness and implementation dynamics from a consultancy-driven standpoint.

Capitolo 3

The Italian Context - ERP Localization in Italy

Enterprise Resource Planning (ERP) systems must be adapted to each country's unique business environment. In Italy, a variety of fiscal, accounting and regulatory peculiarities demand careful localization of ERP software. This chapter provides a theoretical overview of the Italian context for ERP localization, structured into four parts: (2.1) the fiscal and accounting peculiarities of Italy relevant to ERP; (2.2) key local regulations that ERP systems must support; (2.3) technological challenges in localizing ERPs for Italy; (2.4) the state of ERP adoption and digitalization trends in Italy.

3.1 Italian Fiscal and Accounting Peculiarities Relevant for ERP

Italy's financial reporting and tax system has several distinctive characteristics that impact how ERP systems need to be configured. While Italy shares broad European frameworks (such as EU directives on financial statements and VAT), the country maintains specific accounting standards, records, and compliance practices that differ from other jurisdictions. Understanding these fiscal and accounting peculiarities is essential for successful ERP implementation.

National Accounting Standards vs International Standards: Italian companies (except many listed firms) traditionally follow Italian GAAP, set by the Organismo Italiano di Contabilità (OIC), which can diverge from International Financial Reporting Standards (IFRS) in certain respects. For example, Italian statutory accounts emphasize prudence and legal reserves, and they follow formats prescribed by the civil code. An ERP must support Italian chart of accounts

structures and reporting formats (e.g. the format of the balance sheet and income statement per civil code Articles 2424-2425) in addition to IFRS. This means the system should allow dual reporting or flexible account mapping to produce financial statements under Italian norms and IFRS when needed. In practice, global ERP systems handle this via localization packs that include an Italian chart of accounts template and financial statement reports compliant with OIC standards. The local chart of accounts may have granular subaccounts to track movements for tax purposes (e.g. separate accounts for deductible vs non-deductible expenses) - a nuance that an Italian localization will incorporate.

Mandatory Books and Records: Italy has long-standing legal requirements to maintain certain accounting books, some of which must be periodically printed or digitally preserved with timestamped archives. Key books include the Libro Giornale (general journal) and Libro Inventari (inventory/book of accounts). Italian law traditionally required that the Libro Giornale be sequentially numbered and not have gaps; ERP systems must ensure transaction postings include a valid chronological sequence that can be output as an official journal report. Modern practice allows digital storage, but the ERP should be able to produce these ledgers on demand for fiscal audits. Another example is the management of VAT registers: Italian companies maintain separate VAT ledgers for sales (registro IVA vendite) and purhcases (registro IVA acquisti) where each invoice must be logged. An ERP in Italy needs featuers to generate there registers and close them for each tax period. Many Italian localizations include functions to produce the registri IVA and summary VAT liquidation reports automatically.

Periodic Tax Compliance and Filings: the Italian tax calendar imposes frequent reporting, such as monthly or quarterly VAT liquidation (liquidazione IVA) and an annual VAT return. ERP systems typically assist by calculating VAT payable or credit and generating the required summary for these filigs. For instance, Italian localization packages often have a "Report Quarterly VAT Liquidation" function to compile data for the quarterly commuication of VAT balances (know as LIPE). Additionally, Italy has an annual income tax return and regional tax (IRAP) computations - while these are oftern handled in dedicated tax sotware, the ERP must correctly classify revenues and costs (e.g. distinguishing labor cost components not deductible for IRAP) to feed into those calculations. Withholding taxes (ritenute d'acconto) are another peculiarity: when Italian companies pay certain vendors (e.g. freelancers or consultants), they must withhold a portion for taxes. The ERP must support configuring withholding tax codes and percentages so that when a vendor invoice is entered, the system automatically calculates the withholdings and posts them to payable tax accounts. This is often tied to year-end certifications (Certificazione Unica) and an annual 770 tax report. In summary, Italian fiscal peculiarities require ERPs to handle numerous taz-specific journal entries and tracking of multiple tax liabilities concurrently.

Localized Payroll and Contributions: Italy's system of social contributions and payroll taxes is complex, with many contributions types (INPS, INAIL, TFR, etc.). An ERP with an HR module must be localized to handle Italian payroll calculations and reporting to authorities. Even in the financial module, one may encounter postings unique to Italy, like company costs for Trattamento di Fine Rapporto (TFR) - a deferred compensation that accrues for each employee. Though detailed payroll is beyond this chapter's scope, it exemplifies how Italy's legal environment influences ERP configuration across modules.

Culture of Detailed Invoicing and Credit Notes: Italian accounting practice uses invoices and credit notes with detailed legal requirements. For example, Italian law requires that invoices show any price discounts or rebates applied, and specific phrases if certain VAT exemptions are used. ERP templates for Italy include invoice layouts that meet these legal norms (e.g. showng unit prices, discounts, net amounts, VAT breakdown, and phrases citing VAT law for exemptions). Another example is the handling of accounting for bad debt: Italy has procedures for issuing a credit note to reduce VAT if a customer becomes insolvent (subject to legal timing). An ERP should provide functionality to manage such credit notes in compliance with local law.

Multi-GAAP and Consolidation: Larger Italian firms or subsidiaries of multinationals often need to report under both Italian GAAP and parent-company standars. ERP system address this via multi-ledger and an IFRS ledger in parallel. This feature is not unique to Italy, but it is highly relevant because of differences like how certain expenses or revenue are recognized under OIC vs IFRS. For instance, development costs might be expensed under one standard and capitalized under another. The ERP's localization ensures that companies can configure these accounting treatments appropriately without maintaining completely separate systems.

Italy's fiscal and accounting environment is highly formalized and tightly regulated, with complex requirements for record-keeping and tax compliance. ERP solutions must, therefore, incorporate these local specifications to ensure that companies remain compliant with national laws while managing their operations efficiently.

As shown in **Figure 3.1**, the major accounting and fiscal requirements for ERP systems in Italy include the adoption of the national chart of accounts, standardized statutory financial statement formats, legally mandated books such as the Libro Giornale and Libro Inventari, VAT registers and liquidation processes, withholding tax management, and multi-GAAP reporting capabilities. These elements form the foundation of ERP localization, ensuring that system functionalities align with national legislation and administrative practices.

Financial software experts emphasize that Italian accounting and tax legislation is characterized by high complexity and continuous evolution, which makes the

Major Italian Accounting & Fiscal Requirements for ERP

Requirement	ERP Addressing
Chart of accounts (OIC standard)	available in localization
Statutory financial statement formats	provided
Libro Giornale/Libro Inventari	printable from ERP
VAT registers and liquidation	automated
Withholding tax management	automated
Multi-GAAP reporting	supported via parallel ledgers

Figura 3.1: Major Italian Accounting and Fiscal Requirements for ERP

periodic update of ERP localization packages indispensable. Each annual Legge di Bilancio (Budget Law), for example, introduces new fiscal or accounting provisions that compel ERP vendors and consulting partners to modify system configurations accordingly. This constant change demonstrates why a standardized global ERP system must be specifically tailored to address Italian compliance needs. Effective localization guarantees that every aspect of fiscal and financial reporting - from OIC-based accounting standards to VAT submission - is fully integrated within the ERP environment, minimizing the need for external tools or manual interventions.

3.2 Local Regulations in Italy and ERP Compliance

Beyond general accounting practices, Italy has introduced a series of local regulations that directly impact ERP system functionality. These regulations often mandate specific processes or electronic reporting that an ERP must support - failure to do so can lead to non-compliance and legal penalties. Key among these are Italy's pioneering electronic invoicing mandate, the CONAI environmental contribution system, the "split payment" mechanism for VAT and various other tax and reporting obligations. This section outlines these regulations and their relevance to ERP localization.

- **Electronic Invoicing (Fatturazione Elettronica)**: Italy was the first EU member state to enforce mandatory B2B and B2C e-invoicing, starting in January 2019. All invoices must be generated in a standardized XML format,

known as FatturaPA, and transmitted through the government-run Sistema di Interscambio (SdI) platform, which acts as a centralized data-clearing hub. The process represented in **Figure 3.2** illustrates the core workflow of Italy's e-invoicing system, where the ERP application produces the invoice in the prescribed format and sends it to the SdI, which subsequently forwards it to the final recipient. As shown in **Figure 3.3**, there is a typical workflow of an Italian invoice.

Figura 3.2: Italy's E-Invoicing Process

To comply with this regulation, Italian-localized ERP systems must generate XML e-invoices that fully adhere to the FatturaPA schema. This includes the accurate representation of all mandatory data elements - such as seller and buyer tax identifiers, electronic addresses, invoice codes, and a detailed VAT breakdown - and must provide a direct interface for data transmission to the SdI. In practice, this functionality is achieved through either embedded modules or certified third-party integrations. Within IFS Cloud, for instance, the Italy Country Solution relies on a dedicated connector that handles both outbound invoice submission and inbound communication from the SdI, including acknowledgments of receipt, validation errors, and delivery confirmations.

Since Italy operates under a clearance model, invoices are legally recognized only after successful transmission through the SdI. This requirement compels companies to adopt ERP systems that are fully integrated with the national infrastructure, capable of handling end-to-end invoice management. Compliance extends beyond mere XML generation: ERP configurations must also manage specific fiscal details such as virtual stamp duties (marca da bollo) on exempt invoices exceeding €77.47, incorporating these charges into the XML structure as prescribed by law.

By 2020, over 95% of Italian enterprises were issuing e-invoices, an exponential increase from 42% in 2018, before the regulation came into force. This widespread adoption underscores how deeply digital compliance has become embedded in Italian business operations. As a result, ERP systems used in Italy must be designed with built-in e-invoicing capabilities to ensure seamless data exchange with the SdI and

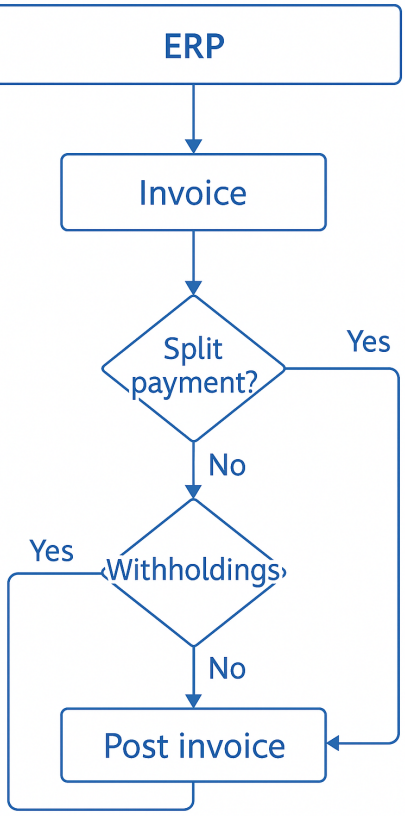

Figura 3.3: Workflow of an Italian invoice

full adherence in the Italian market, making e-invoicing compliance a fundamental design parameter rather than an optional feature.

- **Split Payment (Scissione dei Pagamenti)**: The "split payment" is a VAT mechanism introduced in Italy in 2015 (Law 190/2014 and subsequent extensions) to combat VAT evasion in transactions with public bodies. Under split payment, when a company issues an invoice to certain public sector entities (and, for a period, to some large state-owned companies), the customer pays the VAT directly to the government instead of to the supplier. The supplier thus only receives the net amount of the invoice. For ERP localization, this means the accounts receivable module must treat split-payment invoices differently: the VAT on these invoices is not recorded as part of the company's VAT sales ledger to be paid, but rather flagged as "split" and likely posted to a separate interim account. When payment is received, only the net is applied, and no VAT payment is expected from the company (since the customer handled it). Italian-localized ERPs include configurations for split payment tax codes. For example, an ERP will have a VAT code marked as "split payment" - on using it, the system can automatically set the invoice's VAT to

be excluded from the normal VAT payable calculation. The IFS documentation for Italy describes how invoices with split VAT are registered with special tax codes and limitations (e.g., if split payment is used, certain withholding tax combinations aren't allowed on the same invoice). The ERP's financial reports (like the VAT register or the periodic VAT liquidation) also need to treat split VAT appropriately - typically, such VAT is reported but not included in the total to pay, with a note that the split payment mechanism was applied. This ensures compliance with Article 17-ter of Italian VAT law. Split payment has the effect of increasing VAT credits on supplier side, so ERP cash flow and VAT positioning reports migh also need to reflect the impact (companies in split payment scenarios often accumulate VAT credits). In summary, ERP systems must implement a split payment feature, which is essentially an adjustement in how VAT from certain invoices is accounted. Arcwide's country solution summary for Italy explicitly lists "Split payments" as a supported localization functionality, highlighting is importance.

- **CONAI Environmental Contribution**: CONAI (Consorzio Nazionale Imballaggi) is Italy's National Packaging Consortium, and it manages the Environmental Contribution (Contributo Ambientale) that companies must pay for packaging materials they introduce into the market. Essentially, producers and users of packaging are obligated to declare the amounts of different materials (plastic, glass, metal, paper, wood, etc.) they put into circulation and pay fees that fund recycling efforts. For companies using an ERP, this becomes a specialized but important requirement. ERP localization can help automate the calculation and invoicing of CONAI contributions. For instance, one ERP modules (Fluentis ERP's Recycle Management) allows configuration of packaging material types with their CONAI rates, and it will automatically add the appropriate CONAI fee line on sales invoices or purchase invoices, based on the products and packaging involved. Typically, companies register with CONAI and get a "CONAI code"; the ERP can store this and use it in generating the declaration forms or reports. Each invoice that includes packaging may neede to show the CONAI contribution either incorporated in prices or as a separate line. Some industries handle this by charging customers a visible environmental fee. The ERP must be able to produce CONAI declarations periodically - essentially reports of total packaging material usage by type and the corresponding contributions owed. If not directly producing the official form, the ERP at least gathers the required data (weights, material categories) for the company to submit on CONAI's online portal. In Arcwide's (IFS) solution context, "CONAI" is explicitly listed as part of Italian localization features, confirming that major ERP providers recognize and build support for this requirement. This automation is vital since calculating the contribution can be complex (especially if many products with varying packaging are involved). By integrating CONAI management, an ERP helps Italian companies remain compliant "with regulations regarding disposal and recycling of packaging" without resorting

to spreadsheets or manual tracking.

- **WIthholding Taxes and Contribution to Pension Funds**: As touched on in Section 3.1., Italian tax law requires that certain payments have taxes withheld at the source. Common cases include independent professionals (where typically 20% of the fee is withheld and paid to the tax authority as advance tax for the recipient) and certain types of rents or commissions. ERP localizations for Italy provide parameters to mark a supplier or transaction as subject to ritenuta d'acconto and to automamatically compute the amounts. Moreover, some professional services invoices in Italy include contributions to separate pension funds (for example, lawyers add a 4 % "CPA" contribution to the national lawyers' pension fund). odoo's Italy localization, for instance, has a module to handle e-invoicing with withholding, and fields for "Withholding Tax Type (Italy)" as well as "Pension Fund Type (Italy)" on transactions. This ensures the ERP can calculate and properly post these additional components. The withholding tax is usually a liability until remitted to the government, and the ERP needs to include it in payment processes (like generating the F21 tax payment form, discussed below). By automating this, the system helps avoid errors and ensures that withheld amounts are tracked for each vendor and for annual certification.

-**Esterometro and Cross-Border Invoice Reporting**: The term esterometro referred to a periodic report Italian companies has to send to the tax authorities listing all cross-border invoices (issued to or received from foreign entities). This was introduced in 2019 alongside e-invoicing (since SdI did not capture foreign invoices). As of July 2022, Italy eliminated the esterometro in favor of requiring that even cross-border invoices be transmitted through SdI (or a specific new format for purchases). However, during 2019-2021, ERP systems needed to support generating the esterometro report (typically a CSV or XML file) every quarter. Italy's localization features in some ERPs included the ability to mark customers or suppliers as foreign and then output the list of invoices for estoremtro. In the Priority ERP localization summary, "esterometro" is one of the listed functionalities for Italy. Going forward, this functionality is evolving into directly creating electronic invoices for cross-border transactions (for sales) or a new communication for purchases. Nonetheless, if exemplifies how ITalian regulations continuously introduce new obligations that ERP software must adapt to.

-**Intrastat and EU Reporting**: Italian companies engaged in intra-EU trade must file monthly or quarterly Intrastat declarations (listing details of sales and purchases of goods and services with other EU members). This is an EU-wide requirement, not Italy-specific, but the forms and submission processes are localized (in Italy, Intrastat is submitted to the Customs Agency). Any ERP used in Italy should have an Intrastat feature to accumulate relevant transaction data (commodity codes, countries, values) and generate the Intrastat report files. Many global ERPs include Intrastat as part of their European localizations, and Italy is

no exception. Additionally, Italy has an annual "Declaration of Intent" process for exporters (so-called Lettere d'Intento): frequent exporters can declare an intention to purchase without VAT up to a certain plafond. The ERP should accommodates this by flagging customers or transactions as non-VAT due to such declarations, and ensure that the required reference (protocol number of the declaration from the Tax Agency) is printed on invoices. Odoo's localization, for example, enforces that the special VAT code for "Declaration of Intent" cannot be deleted once used, reflecting how important it is to maintain those records for tax audits.

-**Payment Systems and Bank Formats (F24, Ri.Ba, SEPA)**: Italian businesses make use of specific payment instruments and require ERP support for them. One notable element is the F24 form, a unified form used to pay a variety of taxes and contributions (income taxes, VAT, social contributions, etc.) by offsetting balances. Many Italian accounting software packages allow generating an F24 payment file or printout based on the amounts of taxes due in the accounting system. An ERP with Italian localization will typically help prepare the F24 by compiling all the tax codes and amounts (e.g. from payroll withholding, VAT payable, etc.) into the format of the form, and possibly produce an output that can be uploaded to internet banking. The Priority ERP localization lists "F24 form and auto journal entry" as one of the Italian features, indicating the ERP can both fill the F24 and record its payment entries automatically. Another common instrument is Ri.Ba (Ricevuta Bancaria), essentially a bank collection order for accounts receivable. Italian companies often issue Ri.Ba to have their bank collect invoice payments from customers on due date. ERP systems need to support Ri.Ba by generating the electronic file to send to the bank (following the CBI - Customer to Bank Interchange - standards) and by tracking the status of those collections. The localization features in Italy (as noted in Priority's list) include RiBa support, meaning the ERP can create and manage Ri.Ba transactions. Additionally, Italy full uses SEPA standards for bonifici (transfers) and RID/SDD (direct debits), so any ERP must be able to produce SEPA XML file for payments. This is typically covered under global functionality, but with attention to local details like the use of Italian ABI/CAB bank codes and IBAN formats. Lastly, cash receipt management in retail (registratori di cassa telematici) might be relevant for ERP in certain industries - Italy requires cash registers to send daily receipts to the authority. ERPs that integrate retail modules would need to accommodate this, or at least import the summary of daily receipts for accounting.

Italy's regulatory landscape imposes numerous specific requirements on ERP systems, rendering localization a fundamental rather than optional element. A 2024 overview of ERP country localizations highlights Italy as necessitating functionalities such as "electronic invoices (with SdI), split payments, esterometro, CONAI, frequent exporter management, Ri.Ba and F24 automation", among others. Each of these features is associated with particular legislation aimed at enhancing financial

transparency and tax compliance. An effectively localized ERP is anticipated to provide ready-to-use tools or configurations that address these obligations. In contrast, the lack of such support compels companies to depend on manual processes or external systems - thereby defeating the very purpose of an integrated platform. Compliance pressures have also significantly contributed to digital transformation in Italy; for example, the implementation of mandatory e-invoicing has acted as a catalyst for widespread software upgrades. The array of requirements - from tax reporting to environmental contributions - demonstrates why Italy is often considered one of the most complex environment for ERP providers. In this context, localization is not merely an ancillary feature but entails a comprehensive suite od adjustments spanning sales, purchasing, finance and logistic modules.

3.3 Technological Challenges for ERP Localization in Italy

Implementing an ERP system that meets all the above local requirements is technically complex. There are several technological challenges associated with localizing ERPs for Italy, stemming from the complexity of Italian rules, the pace of regulatory change, integration demands with external systems and the need to balance global and local requirements within one software environment. This section discusses these challenges and their implications for companies and ERP vendors.

Complex and Evolving Compliance Landscape: Italian localization is not a one-time setup but an ongoing effort. Tax laws and regulations in Italy change frequently - for instance, new VAT codes, new reporting mandates, or updated electronic invoice formats can be introduced annually. ERP solutions must be continuously provider, "Italian accounting and tax law is particularly complex and continually changing", requiring that the software "bundle is constantly evolving" to meet new requirements of the tax code. Technologically, this means ERP vendors need a dedicated localization team or partner network for Italy that monitors legislative changes and delivers patches or new versions. Clients face the challenge of applying these updates in a timely manner. For on-premise ERPs, updates might be manual and often lag behind law effective dates, causing interim workarounds. Cloud-based ERPs promise more seamless updates, but even then, coordinating compliance changes is a significant undertaking. The risk of non-compliance is high if changes are not implemented - for example, failing to adapt the ERP when Italy changed its e-invoice XML schema version or when the esterometro was abolished could lead to an inability to legally invoice or report. This demands that IT departments and consultants stay abreast of Italian regulatory news, effectively making compliance knowledge a part of ERP management. It also raises the

importance of having local experts involved in ERP projects, as they can interpret and test changes. From a technical perspective, the ERP's architecture must allow adding new fields, new report layouts and new logic (for calculations of taxes, etc.) without breaking the core system. A well-designed localization will use configuration (metadata) for tax rules so that changes do not require heavy re-coding each time, but it's not always straightforward.

Integration with Government and Third-Party Systems: Modern compliance often requires direct system-to-system communication. In Italy, a prime example is the SdI integration for e-invoicing. ERP software has to send and receive data over the internet to a government platform, using specific protocols (STMP/-PEC email, or web services with digital certificates). Setting up and maintaining this integration is challenging. Many ERP vendors solved it by partnering with specialized e-invoicing service providers or gateways, to whom the ERP hands off the invoice data. This adds another component in the architecture that must be kept in sync. For instance, IFS Cloud's e-invoicing solution for Italy is based on IFS's general e-invoice framework plus a third-pary provider handling the exchange - failed transmissions or format errors can stop the invoicing process, directly impacting cash flow. Companies have to implement monitoring for these integrations (often an external middleware or API calls), which may be unfamiliar territory for IT staff used to self-contained ERP operations. Another integration point is with Italian banks: companies often set up ERP to exchange payment files (like SEPA XML or the older CBI formats) and to import bank statements. Italian banks historically have some unique formats (e.g. CBI RI.BA esito reports). Ensuring the ERP can parse and produce these local formats is a technical challenge, sometimes requiring custom scripting or modules. The F24 payment integration is another example - some ERPs integrate with banking portals or via files to populate the F24, which requires alignment with the Italian banking network standards. Additionally, for certain filings (annual tax returns, intra-year communications), some companies export data from ERP and use government tools or commercial software to upload. Creating those exports correctly (for example, an export of all invoices for a year in the required Agenzia dell'Entrate format for audit) may require custom development if not provided. In short, Italian localization often extends the ERP's reach beyond the company's firewall, necessitating robust integration capabilities and knowledge of government IT systems.

Balancing Global Template vs Local Customization: Multinational companies often deploy a single ERP template across countries, striving for standardization. Italy's requirements, however, can pressure this approach - there may be need for custom developments specific to Italy, which conflicts with a global template. For example, a global company using SAP or Oracle might find that the standard product does not cover a niche Italian requirement (say, managing the plafond for VAT-free imports for an exporter, or generating a very Italy-specific

report). The challenge is to implement these without heavily modifying core code. ERP integrators frequently use local add-on modules (as seen with NetSuite's Italian bundle) to encapsulate Italy-specific logic. Technically, this means more components to maintain and test during upgrades. Each upgrade of the ERP (which may be done to get new global features or security patches must be checked for compatibility with the Italy customizations. Given the complexity, companies sometimes freeze upgrades, leading to outdated systems - a known risk in Italy due to fear that a new version might not immediately support a recent law change. This dynamic can cause Italian subsidiaries to lag behind others in ERP version, or to request exceptions in the global rollout. It's a coordination challenge: the global IT team must incorporate Italian localization updates into their overall ERP lifecycle. As one global ERP consulting firm notes, ERP localization projects "lead to headaches and long delays" if not properly managed. Italy, being high local requirements, can indeed be a source of delay or cost overrun in international ERP deployments.

Data Localization and Formats: Italian localizations must also handle local data formats and standards. Examples include the Italian language (ensuring the ERP interface and printouts can be in Italian; e.g. months in italian on reports, documents in Italian for legal use) and formats like the Codice Fiscale. The Codice Fiscale is a 16-character alphanumeric tax code for individuals (akin to a social security number), derived from their name and birth date, and a 11-digit number for entities (Partita IVA for VAT number, plus a separate Codice Fiscale if needed). ERPs need to incorporate validation logic for these codes (they have check digits and specific patterns) to prevent data entry errors that could lead to rejected filings. Another format is addresses, which in Italy include a two-letter province code (e.g. "MI" for Milano) - some international systems had to adapt their address forms to include province and the Italian post code format (5 digits). IBANs in Italy start with "IT" and include a CIN character and ABI/CAB bank codes internally - ERPs often have validation masks for IBAN by country. While these might seem minor compared to tax, they are essential for a smooth operation (e.g. correct IBAN for vendor payments, correct tax code for e-invoice addressing). The technological challenge is ensuring all these local data fields are integrated into the ERP's master data and transactions. If an ERP implementation were to ignore, say, storing the PEC address for a customer, it would later face difficulty when e-invoicing became required. So, implementers must foresee and include all necessary data fields and master data extensions for italy during design. Modern ERP localization packs typically add these fields (for instance, Odoo's Italy localization adds fields for Codice Fiscale, PEC, CUU code for SDI, etc. in the partner and company records).

Performance and Volume Considerations: Italy's e-invoicing mandate significantly increases the number of transactions and data an ERP might handle (since even small transactions must be processed through the system to generate an

invoice). Companies that previously might have done some invoicing outside the ERP (e.g. using Word/Excel for small invoices) had to consolidate everything into the ERP to comply. This can raise performance issues if the ERP or its add-on service isn't scalable for high invoice volumes or peak periods (many invoices often are issued at month-end in Italy, just before legal deadlines). Ensuring the ERP and its e-invoice integration can handle spikes (for example, thousands of XML transmissions within a short time) is a non-trivial technical challenge that requires proper capacity planning and sometimes architectural changes (e.g. queue management, multi-threading for invoice processing). Similarly, storing digital copies of all those XML invoices and receipts from SdI means more data storage; ERPs must integrate with content storage solutions or archives (as Italian law requires electronic invoices to be archived in a conservazione sostitutiva system for 10+ years). The ERP may need to output data to an archiving system certified for this purpose. This added layer again tests the integration capability of the ERP environment.

Change Management and User Adaptation: Although primarily an organizational challenge, there is a technological facet when users must adapt to new digital processes mandate by law. The Grant Thornton analysis of Italy's e-invoicing rollout noted that beyond IT infrastructure, the "biggest challenge was the human factor", requiring a change of habits for people used to paper processes. ERP interfaces had to be updated (or training provided) so that users could, for example, monitor invoice statuses (accepted, rejected by SdI) - something not needed in the old paper world. New error messages and exception handling screens appeared, requiring user understanding. Therefore, ERP localizations often also include user guidance features, like specific error logs for e-invoice rejection reasons (with codes that mirror Italian tax agency codes). From a support perspective, IT teams had to prepare for supporting users through these changes, which sometimes meant customizing notifications or dashboards in the ERP to highlight, say, invoices not yet acknowledged by SdI. In short, the ERP technology had to not only implement the logic but also help manage the new workflow and controls around it. Companies that understimated the training and change management aspect might find the technology underutilized or circumvented, risking compliance.

To mitigate these challenges, many firms partner with specialized consultants or firms for localization. As CFO Connect notes, ERP localization specialists can bridge the gap by translating local rules into ERP configuration and by identifying compliance issues early. The involvement of such experts (either from the ERP vendor's localization team or third-party advisors) is almost a necessity in Italy's case, given the depth of local knowledge required. Additionally, some modern ERP architectures allow for more agile updates - e.g. cloud ERPs that push localization updates automatically. This reduces the burden on local IT, but shifts trust to the vendor.

The technological challenges associated with Italian ERP localization primarily concern maintaining compliance, ensuring integration with external systems, and guaranteeing user accessibility within a constantly evolving regulatory landscape. Italy represents a paradigmatic case in which the success of ERP implementation depends on the system's ability to adapt to frequent legislative updates and intricate reporting obligations. Even highly advanced global ERP platforms must be adjusted to local contexts, demonstrating that localization is not a secondary feature but an essential prerequisite for operational continuity and legal conformity.

As depicted in **Figure 3.4**, the layers of ERP localization challenges can be viewed as a hierarchical structure. At the foundation lie configuration activities that balance global templates with local parameters. Above these are data and format requirements, such as invoice structures and reporting standards, followed by integration needs that involve external interfaces with systems like the Sistema di Interscambio (SdI) or banking networks. At the top of the pyramid are the regulatory changes that continuously redefine fiscal, accounting, and digital obligations. Each layer builds upon the previous one, highlighting that localization is a multi-dimensional and iterative process requiring both technical expertise and regulatory awareness.

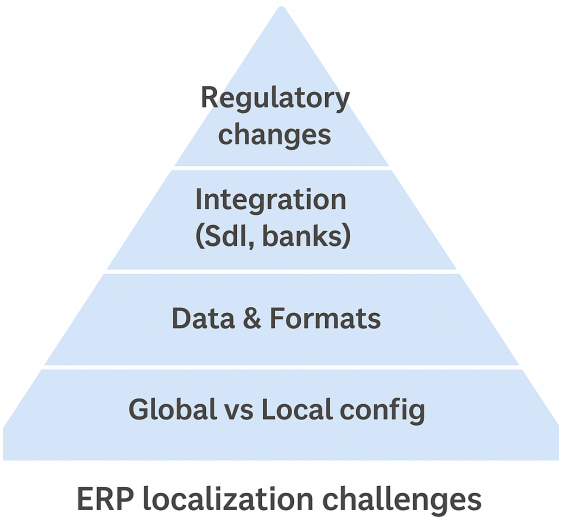

Figura 3.4: Layers of ERP localization challenges

The frequency of such changes is particularly evident in the Italian context, as illustrated in **Figure 3.5**. Since the introduction of e-invoicing in 2018, ERP vendors have had to release several updates per year to remain compliant with evolving fiscal and reporting rules. Between 2019 and 2021, for instance, multiple adjustments were necessary to accommodate new XML schemas, revised VAT

liquidation procedures, and the extension of electronic invoicing to cross-border transactions. More recently, from 2022 onward, the localization process has become even more dynamic, with continuous updates responding to reforms in digital reporting and environmental levies. This accelerated pace underscores the necessity for ERP vendors and consultants to maintain an ongoing localization roadmap aligned with regulatory deadlines.

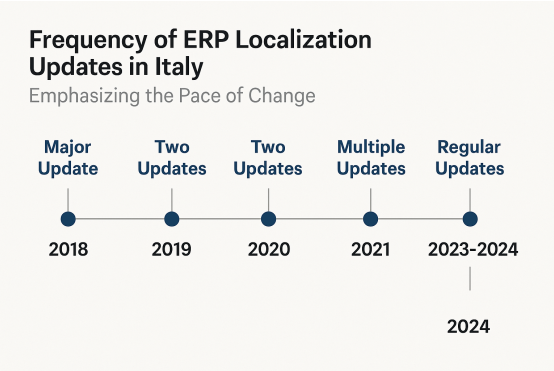

Figura 3.5: Frequency of ERP localization changes in Italy due to fiscal and legal reforms

To ensure full compliance, ERP systems must undergo extensive testing and validation before deployment. Functional checks - such as generating test e-invoices through the SdI, producing draft VAT liquidation reports, or simulating split payment transactions - are indispensable for verifying the accuracy and reliability of the system's localization layer. Once properly configured, an ERP not only guarantees compliance but can also convert regulatory obligations into strategic opportunities. The structured data generated through e-invoicing and digital tax filings can be leveraged for process optimization and analytical insights, transforming compliance into a source of business intelligence.

Italian companies that have successfully localized their ERP systems demonstrate tangible efficiency gains, including the elimination of manual tasks like paper invoicing or independent tax reconciliations. However, reaching such operational maturity requires addressing the complex technical dependencies inherent in localization - those same dependencies that make Italy one of the most challenging yet instructive environments for ERP adaptation worldwide.

3.4 ERP Adoption and Digitalization Trends in Italy

Having examined the technical and regulatory context, we now consider Italy's broader ERP adoption and digitalization trends. Italy has historically trailed some other European economies in digital adoption, especially among small and medium-sized enterprises (SMEs), but recent years have seen significant improvements. Government initiatives, cultural shifts and the very regulations discussed above (like e-invoicing) have acted as catalysts for digital transformation. This section reviews the penetration of ERP systems in Italy, differences by company size and sector and the ongoing trends in digitalization of business processes.

Current State of ERP Adoption: According to Eurostat data, as of 2023 about 43% of enterprises in the EU use ERP software. Italy's own adoption rate has been climbing but is highly stratified by firm size. Large italian companies (250+ employees) almost universally have ERP systems (comparable to the EU large-firm average of 86% using ERP). In contrast, many Italian SMEs - which form the backbone of Italy's economy - still lack fully integrated ERPs. Recent surveys indicate that roughly 30-40% of Italian SMEs use some form of management system or ERP, with usage rates around or above 40% for medium-sized firms, but under 20% for micro-enterprises. This reflects a structure where very small firms (which are numerous in Italy) often rely on manual methods or basic accounting software, whereas larger SMEs and mid-caps are increasingly adopting ERP solutions. The gap in adoption between micro/small businesses and large firms in Italy is substantial, even more so than in some other EU countries. This is partly due to Italy's industrial makeup (many family-run small businesses) and cultural factors (hesitation to invest in expensive software, reliance on trusted external accountants, etc.). However, the trend is upward: the push for digital invoicing forced even smaller entities to start using at least digital billing software, if not a full ERP. Notably, Italy's mandatory e-invoicing has effectively given even micro-firms a reason to adopt software, even if initially just a portal or a lightweight invoicing system. In the long run, this regulatory push is expected to ease these firms into broader software usage. Indeed, Italy's performance in the EU's Digital Economy and Society Index (DESI) for 2022 showed improvement - Italy ranked 8th among EU countries in "Integration of Digital Technology" by businesses, largely because "almost all Italian enterprises (95%) use e-invoices" and over half use cloud services. High e-invoice uptake indicates that at least a basic digital tool is in place in most companies, even if not a full ERP.

Cloud ERP and SMEs: A significant trend in Italy is the growing adoption of cloud-based ERP solutions, especially among SMEs. Studies by the Politecnico di Milano's Digital Innovation Observatories found that about 25-30% of Italian

SMEs are using cloud-based management/ERP systems, a figure that has been rising in recent years. SMEs find cloud solutions attractive because they reduce the need for in-house IT infrastructure and often come at subscription models that lower initial costs. Cloud ERPs (like Oracle NetSuite, Microsoft Dynamics 365, SAP Business ByDesign, or local offerings) are gaining ground as Italy's internet connectivity and trust in cloud security improve. The Italian government has also indirectly encouraged cloud adoption; for example, Transition Plan 4.0 (successor to the earlier Industry 4.0 plan) offers tax credits for investments in software and technology, including cloud software subscriptions. These incentives, funded by the National Recovery and Resilience Plan, have spurred companies to invest in modern ERP and CRM systems. The effect is visible: Italy now exceeds the EU average in cloud usage by businesses (52% of Italian enterprises use cloud services vs 34% EU average in 2022). This indicates a leapfrogging effect - some Italian firms that were behind in on-promise IT adoption are skipping directly to cloud solutions that are more accessible.

Digitalization and Business Process Innovation: ERP adoption in Italy cannot be seen in isolation; its part of a wider digital transformation movement. The DESI 2022 report highlights that 60% of Italian SMEs had at least a basic level or digital intensity (engaging in activities like electronic informations sharing, using software for CRM or ERP, etc.) above the EU average. This suggests that a majority of SMEs have implemented some digital tools. The mandatory nature of certain digital processes (e.g. e-invoicing, digital storage of tax documents, PEC email communications) means that even businesses that might have been reluctant have now been "nudged" into digitalization. Furthermore, the COVID-19 pandemic in 2020-2021 accelerated digital efforts, as compannies needed to enable remote work and online customer interactions, indirectly benefiting ERP usage (for example, by adding e-commerce modules, integrating ERP with web shops, etc.).

The ERP market in Italy shows robust growth as well. Market research reports project increasing revenues in the enterprise software sector in Italy through 2029, reflecting both new implementations and upgrades. Local IT providers (like the cited Wolters Kluwer Genya for SMEs) have developed ERP-like platforms targeting the vast SME segment with simplified, localized functionality. This competition and variety of offerings (including Italian brands and international vendors) give even small firms options that fit their budget and complexity level.

Sectoral and Regional Variations: Adoption of ERP in Italy also varies by industry. Manufacturing firms, especially in Italy's well-known industrial clusters, have a higher ERP usage due to the need for production planning and supply chain integration. Sectors like fashion, automotive and machinery (where Italy has many mid-sized exporters) often have sophisticated ERP setups. In contrast, small retailers, professional services studios or construction SMEs might rely on simpler management software. Geographically, the more industrialized North of Italy tends

to have higher digital adoption among firms than the South, correlating with overall economic development in those regions. The government's digitalization programs aim to address these gaps. For example "PID - Punto Impresa Digitale" initiatives through Chambers of Commerce provide training and subsidies to small businesses across regions to adopt digital tech (including ERPs).

Impact of Regulations on Digitalization: Interestingly, Italy's regulatory approach (sometimes viewed as heavy compliance burden) has also been a driver of digitalization. The dramatic drop in Italy's VAT compliance strategy. For businesses, once an ERP or software is in place to meet a mandate, they often discover efficiency gains. For instance, companies that implemented an ERP for e-invoicing found that they could also streamline inventory and accounting, thus improving productivity. A survey mentioned by Wolters Kluwer noted that cost and complexity perceptions had been barriers for SMEs, but as newer solutions focus on ease of use and fast implementation, these barriers are lowering. This is creating a positive feedback loop: more adoption leads to more success stories and local expertise, which in turn encourages other firms to leap.

Future Outlook - Digital Evolution: Looking ahead, Italy's digitalization of business processes is set to deepen. The European Commission's proposed "VAT in the Digital Age" (ViDA) initiative may introduce continuous transaction controls across the EU, something Italy already leads in with its clearance e-invoicing. Italian companies therefore are somewhat ahead in experience, but they will need to keep their ERPs updated as new requirements (like e-reporting of all transactions or e-achiving rules) come in the next few years. The Italian government, through the PNRR (Piano Nazionale di Ripresa e Resilienza), is investing in broadband, 5G and innovation hubs which will indirectly support businesses in implementing advanced digital solutions (IoT, AI in manufacturing, etc.). We might expect ERP systems to incorporate more of these advanced technologies (e.g. AI-driven analytics, predictive maintenance modules) as Italian industry moves into "Industria 4.0" fully. Already, tax credits under Transition 4.0 specifically incentivize investments in interconnected management systems and data analytics, suggesting that adopting an ERP that can integrate shop-floor data or perform big data analysis could yield fiscal benefits.

However, challenges remain. Italy's SMEs still face skills shortages in IT - implementing and maintaining an ERP requires not only initial investment but also skilled users and IT support. The average age of entrepreneurs in some sectors is high and digital skill levels can be low, which means that alongside technology, education and cultural change are needed. The presence of user-friendly cloud solutions and the push from younger generations taking over businesses are positive signs in this direction. Also, the competitive pressure of globalization forces even smaller Italian suppliers to integrate with international partners' systems (often via ERP-driven supply chain platforms), effectively compelling them to upgrade

their own systems.

Italy's ERP adoption trend has shown consistent growth in recent years, driven primarily by regulatory mandates and facilitated by the increasing availability of cloud-based technologies. The country's business environment, traditionally characterized by a predominance of small and medium-sized enterprises (SMEs), is now undergoing a rapid process of digital transformation, largely accelerated by nationwide policies promoting compliance and digital integration.

As illustrated in **Figure 3.6**, the adoption rate of ERP systems in Italy varies significantly according to company size. While only a small fraction of micro-enterprises have implemented ERP solutions - largely due to cost constraints and limited organizational capacity - the rate increases sharply among small and medium-sized firms, and reaches near-universal levels among large enterprises. The distribution highlights the correlation between the company scale and the ability to invest in integrated information systems capable of supporting complex business operations.

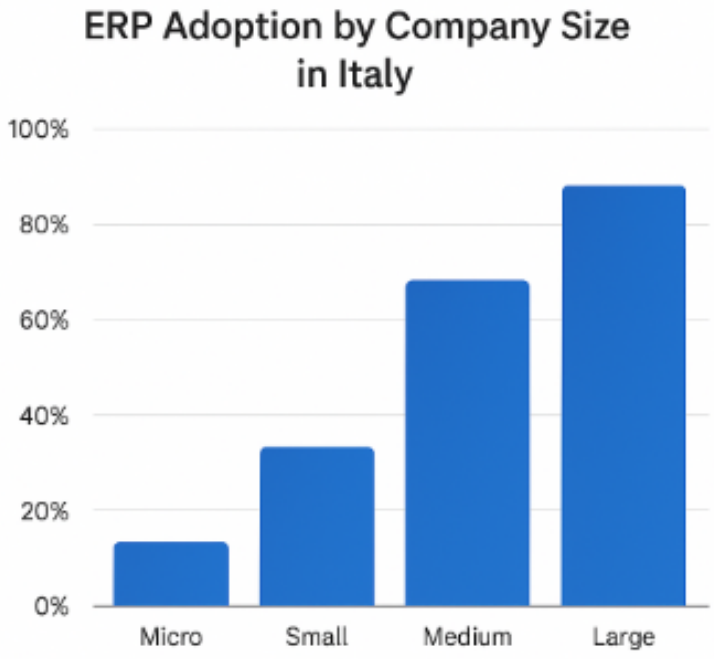

Figura 3.6: ERP adoption percentages by company size in Italy

The progressive expansion of ERP systems across different firm sizes reflects both external pressures and internal motivations. On one hand, regulatory obligations such as electronic invoicing and digital tax filing have compelled firms to adopt

standardized platforms. On the other hand, organizations recognize the managerial advantage of ERP solutions - ranging from real-time visibility of financial data to enhanced coordination across departments. Cloud deployment models have further reduced barriers to entry, enabling smaller firms to access scalable ERP functionalities without the need for extensive infrastructure investments.

Capitolo 4

The IFS ERP System

This chapter provides an in-depth examination of the IFS ERP system, building on previous discussions of ERP theory and localization in Italy. It covers the architecture and features of IFS, details its main modules with a focus on the Finance module, explores how IFS supports customization and localization and compares IFS's localization capabilities with those of other major ERP systems (SAP and Oracle).

4.1 Architecture and Features of the IFS System

IFS (Industrial and Financial System) is a global ERP vendor from Sweden known for its IFS Applications suite (now evolved into IFS Cloud). The system's architecture is broadly layered and multi-tiered, adhering to service-oriented design principles. At high level, IFS's architecture separates the presentation (client) tier, business logic (middle) tier and data (storage) tier, each with distinct responsibilities. This design ensures that user interfaces (whether desktop, web or mobile) interact with the same centralized business logic, which in turn reliably manages all data with integrity. (preventing any direct "back-door" data modifications).

In the **Figure 4.1** the client tier (top) comprises various user interfaces such as IFS Enterprise Explorer, the web Aurena client and mobile applications, which communicate through an access provider to the middle tier. The middle tier encompasses service access and client access layers that expose the business logic, as well as integration capabilities including IFS Connect for SOAP, file transfer, FTP and other protocols. The storage tier (bottom) contains the core business logic (e.g. database procedures) and the data storage infrastructure, ensuring that all data updates proceed via the business logic to maintain consistency.

Modern iterations of IFS, commercially known as IFS Cloud, are built upon this foundation framework utilizing containerized technology. The architecture of IFS

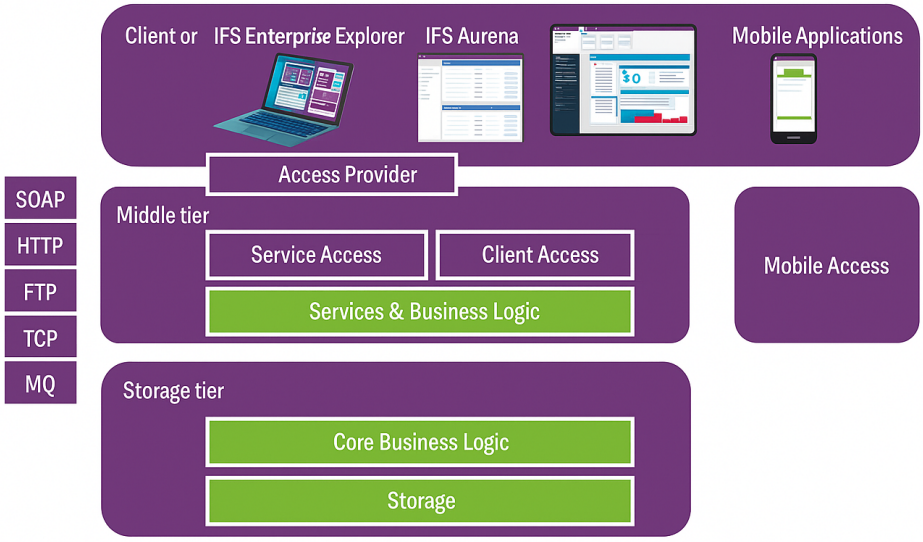

Figura 4.1: Conceptual three-tier architecture of the IFS ERP system

Cloud is modular and managed by Kubernetes, allowing each service or module to operate within its own container. This design significantly improves scalability and deployment flexibility: organizations are capable of deploying the same IFS software either in the cloud or on-premises, and can even transition between deployment models, given that the containerized architecture guarantees consistency across different environments. In practical application, IFS's platform remains open and adaptable, offering fully open RESTful APIs for both integration and extension purposes. Such an open architecture enables IFS to seamlessly integrate with other tools or 'best-of-breed' applications employed by the organization, thereby exemplifying a philosophy of a composable enterprise resource planning system.

Regarding features, IFS Applications/IFS Cloud constitutes a comprehensive enterprise resource planning (ERP) suite specifically designed for medium to large-scale organizations. It is distinguished by its modular architecture, user-friendly interface and scalability. Its principal functionalities include Finance, Human Resources, Supply Chain Management, Manufacturing, Projects, Maintenance, Service management and additional modules. The design philosophy of IFS underscore a unified user experience; notably, the contemporary IFS Aurena interface is web-based and role-oriented. Additionally, it incorporates innovative feature such

as analytics, artificial intelligence (AI/ML) and Internet of Things (IoT) connectivity. The system is widely acknowledged for its efficacy within asset-intensive and project-based sectors - such as Aerospace Defense, Construction and Field Service - owing to the seamless integration of modules like Enterprise Asset Management and Field Service Management with the core ERP system. Overall, the architecture and features set of IFS adeptly balance technical robustness - characterized by a multi-tier, secure and open design - with broad functional capabilities. This enables organizations to customize an ERP solution tailored to industry-specific requirements while retaining the flexibility to adapt to evolving needs.

4.2 Main Modules of IFS - Focus on the Finance Module

Like other Tier-1 ERP suites, IFS offers a comprehensive range of modules that cover almost all key business functions. These include modules for Finance, Human Capital Management (HR), Engineering, Projects, Procurement and Supply Chain, Manufacturing, Sales and Service, Maintenance and more. Each module in IFS is often called as a component or functional area and is designed to work in an integrated way on the single IFS platform. For example, the Manufacturing module connects with Supply Chain and Procurement for material planning, while the Projects module links to Finance for project costing and to HR for labor hours. This integrated design ensures data flows seamlessly across modules, reducing duplication and offering a single source of truth.

IFS Financial Management (Finance Module) : among these, the Finance Module (IFS Financials) is a central pillar of the system and merits special focus. IFS Financials provides a complexity overview of a business's financial position and is designed to meet diverse regulatory and compliance needs across countries. It's composed of several sub-modules that together constitute a full financial suite. The core components of IFS Finance include General Ledger, Accounts Payable, Accounts Receivable, Cash Management/Cash Flow, Fixes Assets, Budgeting and Business Planning, Consolidation, Project Financial Control and support for electronic invoicing among other. Below are key features and sub-modules of IFS Financials:

- **General Ledger (GL)**: the heart of finance, supporting multi-site and multi-currency accounting. IFS's GL allows multiple parallel ledgers (useful for handling local GAAP vs. IFRS reporting in different jurisdictions) and advanced allocation and consolidation rules. It can aggregate financial data from all subsidiaries and units, giving a consolidated view while still allowing drill-down into each entity's details.

- **IFS Consolidation**: a dedicated module for consolidating financial results of multiple companies or business units. It can merge balances from various entities regardless of currency or country, handling ownership percentages and inter-company eliminations automatically. This is critical for groups with international subsidiaries, as it simplifies compliance with group reporting standards.

- **Accounts Payable (AP) and Accounts Receivable (AR):**These modules manage outgoing and incoming invoices, respectively. IFS AP streamlines supplier invoice processing with features like automated three-way matching, support for multiple currencies and payment methods and even self-billing for certain scenarios. IFS AR handles customer invoices and receipts, integrating with order management so that billing is tightly linked with Sales Orders and delivery records. Both AR and AP benefit from workflow automation to improve efficiency (e.g. routing invoices for approval).

- **IFS eInvoice (Electronic Invoicing)**: To further automate financial operations, IFS includes an e-invoicing capability. This allows electronic supplier invoice exchange and processing using standardized formats and advanced authorization rules. For example, supplier invoices can be received as structured electronic documents and automatically matched to purchase orders in the system, significantly reducing manual data entry and errors.

- **Cash Management Cash Flow Analysis**: IFS offers cash management tools that consolidate information from AP, AR, sales orders, purchase orders, etc., to project cash flow and liquidity positions. This helps treasury and finance teams manage liquidity by forecasting incoming and outgoing cash under various scenarios.

- **Budgeting and Business Planning**: The finance suite includes IFS Business Planning, which supports creation of budgets and financial forecasts. It often integrates with the enterprise performance management aspects of IFs. Planners can model revenue projections, cost forecasts and what-if scenarios across departments, with the software's planning engine ensuring consistency across the balance sheer and P

- **Project Finance**: Uniquely, IFS embeds project financial control capabilities (IFS Project Finance) that tie into its Project Management module. This allows tracking of project expenses and revenues in detail, linking financial transactions to specific projects or contracts. It supports various revenue recognition methods (e.g., percentage of completion) and capitalizations, which is crucial for industries like construction or aerospace where long-term projects are common.

- **Fixed Assets**: The Fixed Assets module in IFS handless asset registers, depreciation and asset accounting. It supports multiple depreciation methods and books (for example, one for statutory accounts and another for tax or managerial purposes) and it integrates with GL and procurement so that asset acquisitions and disposals update financial records automatically.

- **Compliance and Multi-currency**: Across all these sub-modules, IFS Financals is designed to ensure compliance with global and local accounting standards. It supports multi-currency accounting (with automatic exchange rate handling and currency revaluation), multi-GAAP reporting and tax handling for different jurisdictions. For example, the system can produce local tax reports and also consolidate financials in an international standards - a feature vital for companies operating in multiple countries.

IFS's Finance module thus offers a robust and comprehensive financial management system. It equips businesses with tools for everything from day-to-day transaction processing (payments, biling, asset tracking) to strategic financial management (consolidation, planning, analysis). Furthermore, because all these functions are integrated within the IFS ERP, data flows naturally from other parts of the organization into Finance: sales orders generate receivables, purchase orders feed payables, production orders and maintenance activities can create accounting entries, etc. This integration ensures real-time financial visibility. ultimately, the finance suite in IFS not only helps in maintaining books and records but also supports decision-making by providing accurate financial insights, all while ensuring decision-making by providing accurate financial insights, all while ensuring that regulatory compliance (such as tax filings, electronic invoicing mandates or audit requirements) is upheld in the system's design.

4.3 Customization and Localization in IFS

Every enterprise has unique processes and local requirements, so a critical aspect of an ERP system is how well it can be customized and localized. IFS has been designed with a strong emphasis on flexible tailoring of the system without compromising upgradability. This is achieved through a structured approach known as the Layered Application Architecture (LAA) in IFS Cloud. In essence, IFS distinguishes between different layers of modifications:

- **Personalization layer**: This is the top layer where end users can personalize their own experience (for example, adjusting UI themes, saving queries or creating bookmarks). These changes affect only the individual user and do not require any coding.

- **Configuration layer**: This layer involves no-code or low-code adjustments made at the company or implementation level. Business users or consultants can configure new fields (often called custom fields/attributes), design custom reports, modify screen layouts, set up workflow or create dashboards - all using built-in IFS configuration tools, without altering source code. Such configurations are stored separately from the core product code, ensuring they can be carried forward when the system is upgraded.

- **Customization layer**: This involves deeper changes that do require code - typically done by developers - such as adding new business logic or overriding standard logic for a specific need. IFS allows customizations via extension classes or events (historically using PL/SQL procedures or nowadays through extensions in the IFS developer tools). These customizations are isolated in their own layers so that they can be managed during upgrades (IFS provides guidance so that if the core code is updated, one can reapply or adjust the custom code with minimal conflict). It's worth noting that certain core platform components cannot be customized for stability reasons, but business-facing components generally can be.

- **Core (Standard) Layer**: This is the base IFS application as delivered by the vendor. It contains all the standard functionality and is maintained by IFS. The core code is untouched by the customer, and all the above layers sit on top of it.

Using this layered approach, IFS achieves a separation of concerns. Customers can customize the system extensively (through configuration or customization) without modifying the core code, which makes applying patches or upgrading to new versions easier. For example, a company could add a custom business rule in the customization layer to handle a special tax calculation, while keeping the standard tax logic intact beneath. When an update arrives (say, a legal change or a system upgrade), the core is updated and the custom layer can be revalidated or adjusted if needed, rather than being overwritten. This approach is academically and pratically critical, as it significantly reduces the long-term cost of ownership of the ERP - a significant concern in ERP management.

In addition to general customization, localization is a specific type of tailoring aimed at meeting country-specific requirements (legal, fiscal, linguistic, etc.). IFS, being a global ERP, provides a variety of localization features:

- **Language Support**: IFS Applications/IFS Cloud is available in a multitude of languages. According to recent data, it supports over 20 languages out-of-the-box, including English, Italian, French, German, Swedish, Chinese (semplified), Arabaìc, and many others. users can operate the software in their local language, and companies can have multi-language setups (useful in multilingual regions or for global companies where, for example, Brazilian users see Portoguese while Italian users see Italian in their interface). The system separates language translations from code via language packs, making it straightforward to add or update translations.

- **Country-Specific Functionality**: IFS is used in over 40 countries and provides standard support for many country-specific business practices and legal requirements. For many countries, IFS includes "country packs" or country solutions that deliver specific features (often within the Finance module) to comply with local regulations. For instance, for countries in the EU, IFS supports EU VAT reporting requirements; for Sweden, it supports Swedish BAS chart of accounts standards, etc. In the case of Italy, IFS provides functionality for the Italian fattura elettronica (electronic invoicing) mandate: the system can produce invoices in the required

FatturaPA XML format for submission to the government's SDI platform. The Italy country solution also covers other Italian practices like modulo di trasporto (transport document) handling, specific tax codes and local statutory reports. These are embedded in the standard solution when the company is configured as an Italian entity.

- **Global Extension for Complex Countries**: In some cases, IFS offers additional "global extension" modules for countries with very complex regulatory environments. For example, Brazil and India are noted for heavy tax and reporting requirements; IFS has global extension pack to handle these (covering multi-layered taxes, electronic fiscal reporting, etc.). These extensions are developed by IFS or its partners to meet the detailed local legislation. If a company implements IFS in such countries, they can deploy the extension so that the ERP handles most local task natively.

- **Configuration vs. Customization for Localization**: IFS's general approach is to provide as much localization as possible within the standard product or through configuration. Many local requirements can be met by configuring the finance module - for example, setting up local tax codes, payments formats (like ISO20022 SEPA payments for Europe, or ABA files for the US) or using flexible reporting tools to create statutory financial statements. The extent of the standard solution's coverage varies by country: in relatively standardized environments, everything might be managed through configuration; in more complex locales, there may be gaps. IFS promotes an implementation strategy where the project team maps local legal requirements to what is available in the standard IFS system. Any gaps identified can then be filled with simple workarounds, configurations or minor customizations. When certain statutory report or e-invoicing formats are unavailable, third-party solutions or add-ins are sometimes used - for example, an external tax reporting tool that extracts data from IFS. The IFS community knowledge base notes that often, remaining localization gaps are in statutory reporting (such as very specific government report formats), which can typically be addressed with reporting tools or partner solutions if needed.

- **Localization Control Center**: A recent innovation in IFS Cloud is the introduction of a Localization Control Center in the IFS Aurena interface. This is essentially a central console where one can manage and monitor the localizations enabled for each company in the system (for instance, turning on the Italy-specific functionality for an Italian subsidiary or viewing all the local features applied). This reflects IFS's efforts to simplify multi-country deployments by making localization features more transparent and easier to administer within one global instance of IFS Cloud.

In summary, IFS provides a rich tool set for customization and localizations. Its layered architecture ensures that custom changes (whether for unique business processes or local legal compliance) do not jeopardize the ability to upgrade the

system. Meanwhile, the vendor supplies a range of localizations for key markets (language packs and country-specific features) and a methodology to address additional local needs via configuration. This balance allows companies using IFS to run a single global ERP instance that can be both globally standardized and locally compliant, aligning well with management and engineering best practices for enterprise systems.

4.4 IFS vs. SAP and ORACLE: A comparison in Localization Capabilities

ERP systems are judged not only by their functional breadth but also by how well they adapt to different countries' requirements - a crucial aspect for multinational implementations. SAP and Oracle are two of the largest ERP providers globally, and both have substantial offerings in terms of localization. Here we compare IFS with these competitors specifically regarding localization and international deployment:

- **Geographic Coverage**: Among the major ERP vendors, the extent of localization capabilities varies considerably depending on the global reach, technological strategy, and target market segment of each provider. **Figure 4.2** illustrates a comparative overview of localization coverage across three leading ERP systems - SAP, Oracle, and IFS - based on the number of countries supported and the languages officialy available.

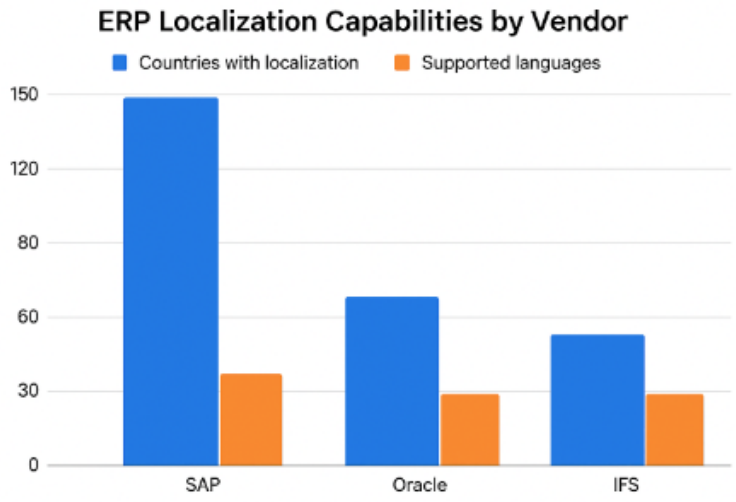

Figura 4.2: Localization Comparison among leading ERP Systems

SAP stands out as the vendor with the most extensive localization network, offering localized versions for more than 130 countries and supporting over 40 languages within its software suite. This wide coverage aligns with SAP's strategic positioning as a 'global-ready, local compliant' solution aimed at large multinational enterprises. Through continuous updates and compliance packs, SAP ensures adherence to a broad range of fiscal and regulatory frameworks, allowing companies to deploy standardized solutions across diverse markets while maintaining conformity with local legislation.

Oracle, while slightly less extensive in coverage, also provides robust localization capabilities across its ERP offerings. Oracle Fusion Cloud ERP, representing the company's latest generation of enterprise systems, supports 27 languages and is deployed in approximately 60 countries. Although Oracle does not publish an exact figure for the number of localized versions available, documentation and implementation data indicate broad regional coverage through both its cloud-based and legacy E-Business Suite solutions. Oracle's approach combines global scalability with modular localization components, making it particularly suited for organizations with geographically distributed subsidiaries that require flexible compliance configurations.

IFS, by comparison, delivers a more focused localization strategy that reflects its core market orientation toward manufacturing, service and asset-intesive industries. The IFS Cloud platform currently supports localizations in more than 40 countries and approximately 20 languages. While its global footprint is narrower than that of SAP or Oracle, IFS ensures full compliance and functional coverage in all markets where it operates directly, particularly in Europe, North America, and selected regions in Asia. This targeted approach enables IFS to maintain a strong balance between system simplicty and localization depth, ensuring that its customers - often mid-to-large enterprises - can meet local fiscal and accounting obligations without excessive system complexity.

This bar chart compares the official localization coverage of three major ERP providers: SAP, Oracle and IFS. The figure highlights the strategic trade-off between global reach and tailored regional solutions.

- **Depth of Localization Features**: SAP has a reputation for very deep localization in each country it supports. For example, SAP's software includes localized payroll calculations, tax handling, financial reporting formats and even supports local business practices (like specific invoice layouts or unique supply chain processes required by law). SAP regularly updates these local versions to comply with changing regulations. In fact, SAP has an initiative called "Embedded Localization" which provides continuous updates (via support packs or cloud updates) for legal changes around the world. SAP also offers tools like the Regulatory Change Manager to track and apply regulatory updates in the system. This heavy investment means that companies using SAP can usually count on SAP to deliver

timely patches for, say, a new VAT law in the EU or an e-invoicing mandate in Turkey, often without needing custom work.

Oracle, similarly, delivers a range of local functionalities with its ERP. Oracle's Fusion Cloud Financials, for instance, is designed for "global use" out-of-the-box. It includes features such as flexible number/date formatting by locale, support for various country-specific tax regimes, local payment formats, etc. Oracle historically provided localized versions of its E-Business Suite for dozens of countries and in its cloud updates, continues to add local features (for example, support for India, GST, Brazil Nota Fiscal, etc., have been rolled into updates). Oracle Cloud being available in 27 languages indicates a commitment to multilingual user interfaces and Oracle provides seeded local chart of accounts or accounting configurations for some jurisdictions. However, Oracle's strategy also leans on a combination of "core + optional local add-ons" - meaning some requirements might be met by additional cloud services or partner solutions.

IFS offers somewhat fewer built-in local features accros the board, but it covers the essentials needed for its target markets. In practice, IFS can be configured to handle most local legal requirements where it is implemented. For example, IFS supports U.K. Making Tax Digital (MTD) compliance through its tax reporting configuration and supports EU countries' requirements like Intrastat and EU VAT reporting. Where IFS does not have a native feature, it often provides hooks or integration capability for third-party solutions - for example, an interface to a local payroll system if IFS HCM doesn't support a country's payroll or using an external tool for complex statutory reports not in IFS. The need for external solutions tends to arise in relatively few cases; IFS's own experts note that usually "the standard solution and configurations" take you a long way and remaining gaps are typically in statutory reporting which can be solved with reports or partners tools.

- **Updates and Compliance Management**: Another angle of comparison is how each vendor keeps up with regulatory changes. SAP has a very structured approach: as noted, it provides more than 1000 localized functions and continuously updates them. For example, when Italy introduced mandatory B2B e-invoicing, SAP delivered standard integration with the Italian SDI and a FatturaPA format output as part of its localized version. SAP's large user base in each country often pressures it to be ahead in compliance. Oracle also maintains a globalizations team; Oracle Cloud ERP updates (which occur quarterly) frequently include new local features or changes. Oracle, like SAP, publishes "Global Human Resources and Financials Localizations" documentation that lists what's supported in each country and any new additions per release. IFS, being smaller, may not release localization updates as frequently; instead, it often relies on its regional teams or partners to handle urgent changes. However, with the move to IFS Cloud and twice-yearly release cycles, IFS has also begun to streamline updates - for example, delivering support for new tax digital reporting requirements in a specific update

when needed. The introduction of the Localization Control Center hints that IFS is trying to make the process of enabling and updating local features more centralized for customers.

- **Multi-Legislation in a Single Instance**: SAP and Oracle are built to allow a single ERP instance to serve multiple companies in different countries simultaneously. SAP, for instance, allows each company code to be assigned a country and then automatically enforces local settings for that company (like tax calculation procedure, currency, address formats, etc.). This way, a multinational can run a unified system. IFS also supports multi-company, multi-country setups in one instance - a strength of IFS is its multi-company architecture where transactions (like inter-company sales or centralized procurement) can seamlessly occur across entities. Users have reported that IFS can handle multi-site, multi-currency operations well, although for very disparate local requirements, some additional configuration may be needed. In one discussion, IFS consultants noted that for each new country implementation, one should map requirements against IFS and address gaps as needed, indicating that while possible, it requires careful planning. In contrast, SAP's approach would be "activate country X template" which is often more out-of-the-box.

- **Examples and Use Cases**: To illustrate, Microsoft's deployment of SAP for global HR was influenced by SAP's out-of-the-box localization in over 100 countries - meaning they could use SAP Success Factors (HR) or SAP S/4HANA in many locations without building custom local solutions. Another example is L'Oréal, present in 150 countries, which leverages SAP's localizations to navigate complex local requirements worldwide. Oracle ERP is similarly used by companies in many regions - for instance, a company operating in both the US and Brazil can use Oracle Cloud ERP with the Brazil local taxation features enabled. IFS, on the other hand, has a strong presence in specific industries and mid-market multinationals; an industrial company might use IFS in say 10 countries across Europe and Asia. They would benefit from IFS's support of those 10 countries (with language packs and legal functions) and for a few specific needs (say, an integration to Russia's online tax system or India's e-invoicing) they might engage an IFS partner to provide a solution. IFS's community-driven approach (with regional partner add-ons) can fill gaps, but it relies on that ecosystem being available.

- **Flexibility vs. Completeness**: It's also worth noting a strategic difference: SAP and Oracle aim to provide as complete a localization as possible, which can sometimes make their systems very complex (with thousands of tables and settings for all scenarios). IFS tends to keep the core simpler and uses its flexibility (configurations or extensions) to meet requirements. For a company that operates in fewer, more controlled countries, IFS's approach can be efficient - you turn on what you need and configure the rest. For a company in 50+ countries, SAP's comprehensive library might reduce the need for custom work. In terms of

localization maturity, SAP is often considered the gold standard in ERP localization coverage, Oracle is a strong contender especially with its Cloud suite catching up and IFS covers the key bases with a leaner approach.

The comparison underscores several significant distinctions among the leading ERP providers. SAP distinguishes itself through the extensive scope and depth of its pre-integrated localization features, rendering it particularly appropriate for large multinational corporations with complex compliance needs. Its 'country versions' are accessible for most markets and are routinely updated directly by SAP.

Capitolo 5

Arcwide and the Role of the ERP Consultant

5.1 Overview of Arcwide

Arcwide is a specialized consulting firm established in 2022 as a joint venture between IFS (a global ERP software vendor) and BearingPoint (a European management and technology consultancy). This partnership was conceived to meet growing demand for IFS Cloud ERP implementations across Europe by uniting IFS's cloud technology expertise with BearingPoint's business consulting capabilities. Formally launched in April 2022 with an initial team of about 85 professionals across nine countries, Arcwide experienced rapid growth - reaching approximately 280 consultants in 12 countries by the end of 2022. It has since expanded further through strategic acquisitions and hiring, becoming the largest IFS-dedicated systems integrator globally, with over 550 specialists in more than 16 countries as of 2025. This growth underlines Arcwide's success in the ERP services market and its ability to scale both geographically and in expertise. Arcwide operates as an independent entity that is jointly owned by IFS and BearingPoint. This unique corporate structure allows Arcwide to function with the agility of a specialized consulting firm while leveraging the resources and expertise of its two parent organizations. Arcwide consultants have direct access to IFS product teams and research and development insights, thanks to the joint venture connection, as well as benefiting from BearingPoint's established consulting methodologies and client network. The company is led by a dedicated management team, with Philippe Chaniot serving as CEO since its launch. Governance involves input from both parent firms, ensuring alignment with IFS's product strategy and BearingPoint's service quality standards. Arcwide's service portfolio covers the entire lifecycle of IFS Cloud ERP, including software licensing and sales, implementation projects,

business process transformation, and ongoing application management support. This comprehensive capability allows clients to engage with Arcwide at every stage, from the initial purchase of IFS software through configuration, localization, user training, go-live, and post-implementation support, providing a 'single unified experience' throughout the full ERP journey.

Arcwide specializes in ERP localization projects by leveraging its dual structure, combining the technological expertise of IFS with the consulting experience of BearingPoint. This unique organizational model is represented in **Figure 5.1**, where Arcwide's identity emerges at the intersection of IFS's technological innovation and BearingPoint's management consulting capabilities. The joint venture was established to deliver a comprehensive service model that integrates software implementation with business process optimization, ensuring that clients receive both the technical and strategic support required for successful ERP deployments.

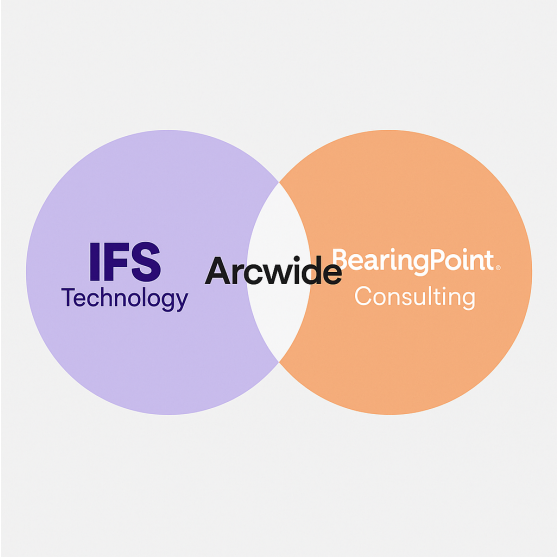

Figura 5.1: Arcwide's origin and structure

Since its foundation, Arcwide has strategically focused on key European markets, including Italy, where IFS has been expanding its customer base. As illustrated in **Figure 5.2**, Arcwide's global footprint now extends beyond Europe, with operations in more than sixteen countries and a workforce exceeding 550 professionals.

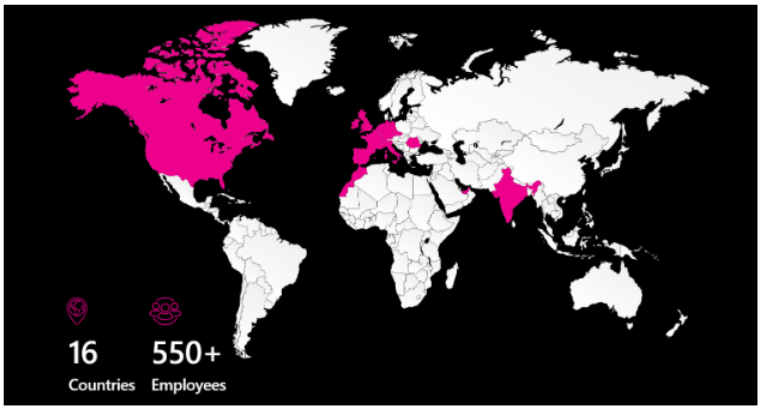

Figura 5.2: Arcwide's presence in the world

5.2 The Operating Model of IFS-BearingPoint Joint Venture

Arcwide's operational model is meticulously crafted to integrate software expertise with consulting services seamlessly. Unlike conventional vendor-partner arrangements, the joint venture functions as an independent organization solely dedicated to IFS solutions. Both IFS and BearingPoint have invested resources and personnel into Arcwide, which operates as a separate entity with its own governance structure. This framework enables Arcwide to operate with autonomy and efficiency while maintaining close collaboration with its parent companies. Importantly, Arcwide holds IFS Platinum Partner status in both Services and Channel categories, signifying its authorization to resell IFS software licenses and to provide implementation services at the highest level of partnership. Consequently, Arcwide is positioned to offer clients a comprehensive "one-stop shop' for ERP projects—ranging from software procurement to implementation and ongoing support, all managed within a single entity. This cohesive approach was a strategic objective of the joint venture—to deliver a consistent, end-to-end experience for customers throughout the entire IFS Cloud adoption lifecycle.

Practically speaking, the Arcwide operational model capitalizes on the strengths of its founders. IFS provides product innovation, technical training, and direct access to its RD pipeline, thereby ensuring that Arcwide consultants remain informed about the latest IFS Cloud releases and features. BearingPoint offers its consulting methodologies, project management discipline, and change management expertise, refined over decades of enterprise transformation initiatives. The joint venture structure results in Arcwide teams often comprising a mixture of former

IFS professionals—possessing comprehensive technical knowledge of the ERP system—and former BearingPoint consultants—specialized in business process design and industry best practices. This cross-pollination facilitates the delivery of projects that are not only technically sound but also aligned with clients' business objectives—"delivering on the business transformation using IFS tools," as IFS's COO Michael Ouissi observed. Arcwide's unique position in the marketplace stems from its integration of system implementation expertise with high-level business consulting within a single project team—an approach that Ouissi describes as 'very rare... at that depth' in conventional ERP engagements.

Another key aspect of Arcwide's model is its focus on IFS Cloud deployment and value realization. Arcwide operates with an agile mindset centered on accelerating 'time of value' for customers. Projects are structured to quickly configure core IFS modules and deliver functional value iteratively, rather than through long, monolithic implementations. Arcwide provides services such as value assessment workshops, process scoping, and proof-of-value prototypes early in projects to align the ERP solution with business goals. Furthermore, Arcwide's remit includes change management and user training services as integral parts of projects, not as afterthoughts. By handling organizational change (communications, training sessions, new process roll-outs) within the same team that configures the software, Arcwide ensures that the client's workforce comprehensively absorbs the technological transformation.

Arcwide's operating model is also built around long-term partnerships and continuous improvement. Rather than limiting its activity to the implementation phase, Arcwide continues to support clients after go-live through Application Management Services (AMS) and ongoing system optimization. This model ensures stability and adaptability as IFS Cloud evolves through frequent version releases, typically two per year.

As illustrated in **Figure 5.3**, Arciwde's approach integrates both technical and organizational dimensions. The implementation phase combines technical configuration, managed by IFS experts, with business change management, led by BearingPoint consultants. This dual expertise guarantees that system functionalities are properly localized while business processes and users adapt effectively to the new environment. After a successful go-live, the same teams remain involved to test updates, deploy enhancements, and maintain compatibility with future IFS versions.

Arcwide's teams plan for these release cycles within their operational approach: they establish processes to test new versions and deploy updates for clients, ensuring that customizations or local configurations remain compatible and that clients can benefit from new features with minimal disruption. Arcwide's CEO emphasized that the joint venture model offers 'continuity and value creation with each release' of IFS Cloud. Practically, this entails that Arcwide collaborates closely with IFS

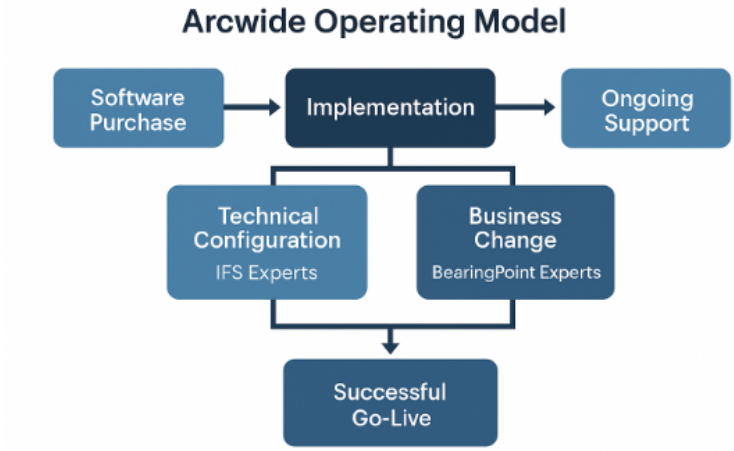

Figura 5.3: Arcwide Operating Model

to be informed of upcoming changes (for example, new Italy-specific compliance functionalities or enhancements) and actively assists clients in adopting them. The support of IFS enables Arcwide to influence the product roadmap by conveying customer feedback or emerging localization needs directly to IFS. Conversely, IFS benefits from Arcwide as an internal skilled delivery team capable of ensuring customer success and serving as a reference. In summary, the operating model of Arcwide is distinguished by integrated service delivery, comprehensive vendor alignment, and lifecycle engagement—elements that collectively serve to mitigate the fragmentation commonly observed in ERP projects.

5.3 The Role of ERP Consultants in Localization Projects

ERP consultants serve a crucial function in localization initiatives, acting as the intermediary between a standardized global software package and the particular requirements of a local business environment. In the context of Arcwide's IFS implementations, consultants are recognized not only as functional specialists in the ERP system but also as advisors on local best practices and regulatory compliance. Their responsibilities encompass the entire project lifecycle. The primary roles and activities of ERP consultants in localization involve:

- **Requirements Gathering and Analysis**: The consultant commences by eliciting detailed requirements concerning local laws, regulations, and business processes. This entails collaborating closely with the client's finance, tax, and

operations teams to comprehend country-specific needs (for example, Italy's e-invoicing mandate or unique tax regulations). They gather current information on local data handling, accounting standards, tax reporting formats, and any compulsory government interfaces. A vital component of this phase is conducting a gap analysis—comparing the standard ERP functionality with local requirements to identify any deficiencies or areas requiring customization. For instance, consultants will verify whether the ERP can generate all necessary Italian fiscal reports; if not, they will determine how to address these gaps through configuration or custom development. This process necessitates not only technical expertise in ERP systems but also familiarity with local statutes and industry norms. As the TMF Group observes, ERP localization specialists "bring essential knowledge of both local and international regulations" and are capable of identifying where standard systems require modification.

- **System Configuration and Customization**: Once the requirements are clarified, the ERP consultant proceeds to configure the system to fulfill those localization needs. In an IFS project, this may entail activating Italy-specific functionalities and parameters. For instance, the consultant would utilize IFS Cloud's Localization Control Center to enable features such as electronic invoicing, Italian tax books, and payment formats specific to Italy. Additionally, they establish master data and fundamental settings, including local tax codes, fiscal calendars, and number series for invoices, in accordance with Italian legislation. Many localization requirements can be addressed through standard configuration—such as designating a company as an 'Italian company' within IFS, thereby unlocking relevant Italian modules. The consultant ensures that all essential local functions are activated; for example, IFS indicates certain features as mandatory for Italy, such as specific tax calculations, which are non-disableable. Where identified gaps exceed the scope of configuration, the consultant devises appropriate solutions, which may involve lightweight customization or extensions—such as developing a custom report format to meet government specifications or creating integrations with third-party government portals. Throughout the process, the consultant meticulously documents how each localization requirement is satisfied within the system. Their role encompasses translating business and legal requirements into ERP configurations or code modifications, effectively guiding the system on how to operate within the local context.

- **Testing and Quality Assurance**: Rigorous testing is particularly vital in localization projects, as even minor errors can result in non-compliance. ERP consultants accordingly plan and implement tests to verify that all localized functionalities operate correctly. They craft test scenarios for each localization component—such as generating an Italian e-invoice XML from the system and verifying its conformity to the FatturaPA schema, or running a VAT ledger report and validating the totals and formatting. Testing encompasses various levels: unit testing of specific

functions (e.g., verifying the correct calculation of withholding tax), integration testing (e.g., confirming successful transmission of e-invoice files to the government exchange system), and user acceptance testing (e.g., ensuring end-users achieve correct results). Consultants frequently prepare compliance checklists to guarantee, for instance, that posted invoices appear with the appropriate sequential number in the VAT register, and adhere to best practices in validation and security testing prior to go-live. It is common to involve key users, such as the client's chief accountant or tax specialist, during testing to obtain confirmation that system outputs—such as invoices, journals, and reports—align with local legal requirements. Any issues identified are addressed through configuration adjustments or modifications to custom code. ERP consultants uphold quality and compliance through rigorous testing, a step that, as one guide emphasizes, should never be underestimated in localization efforts.

- **Compliance Assurance and Regulatory Updates**: A vital ongoing responsibility of consultants is to ensure compliance not only at the go-live phase but throughout the entire lifecycle of the system's utilization. They continuously monitor changes in local legislation, including tax rates, reporting formats, and new regulatory mandates, guiding the client regarding necessary system updates. For example, if Italy introduces a new e-invoice document type or modifies VAT return procedures, the consultant also ensures that auditability and documentation protocols are adequately in place—such as verifying that the ERP's audit trail complies with local tax authority standards or that electronic records are retained for the legally mandated period. They may coordinate with the client's auditors or external experts to validate that the ERP configuration satisfies all statutory requirements. As ERP localization specialists possess the expertise to interpret tax and accounting regulations and translate them into instructions for IT vendors, they effectively serve as custodians of compliance within the project team. Arcwide consultants, for example, utilize official IFS country solution documentation and draw upon their experience from previous projects to ensure that no detail is overlooked—such as specific Italian invoice footer texts or monthly tax filings. This role persists beyond the implementation phase, with consultants often providing support during year-end activities, including closing entries in accordance with local GAAP, generating annual declarations, and assisting with government audits or inquiries related to ERP data.

- **Training and Knowledge Transfer**: ERP consultants involved in localization initiatives bear the responsibility of instructing end-users and administrators regarding the newly implemented system, with particular emphasis on localized procedures. They are tasked with developing training materials and facilitating workshops to ensure that the client's personnel can operate the ERP system accurately within the local context. For instance, Arcwide consultants may provide training to the finance team on generating and submitting electronic invoices via

IFS, printing Italian VAT registers, or managing error messages from the tax authority. Such training frequently includes demonstrations of new workflows—such as the updated process of issuing customer invoices that now must be routed through the SdI network—and clarifies any modifications from previous procedures. To support learning, consultants utilize documentation such as user manuals and process flow charts, and may configure the system with localized language settings or templates to assist user navigation (e.g., enabling Italian language UI in IFS Cloud). Effective training is vital for achieving user adoption; it is considered best practice for ERP consultants to provide comprehensive training sessions for the client's employees. The ultimate objective is for the client's team to become self-sufficient in routine tasks and to understand how to remain compliant using the system. Consultants often adopt a train-the-trainer methodology, identifying key power users in Italy who can serve as internal experts. Additionally, they ensure the transfer of knowledge regarding the system's configuration, so that the client's IT or ERP support team comprehends the localization settings necessary for future maintenance.

- **Change Management and Go-Live Support**: The implementation of localized ERP functionality generally necessitates substantial process modifications for the client organization. Consequently, ERP consultants assume a change management role, preparing the enterprise for the transition. This preparation includes the development of communication plans (to inform stakeholders about new processes such as e-invoicing), the updating of standard operating procedures, and occasionally the redesign of certain workflows to enhance efficiency. For instance, if invoices were previously printed and mailed, but now must be transmitted electronically, the consultant assists the organization in adjusting its invoice approval cycle and customer communication strategies to accommodate the new digital process. Additionally, they may advise on organizational changes, such as establishing a compliance officer to review e-invoice rejections or integrating a new step into the month-end closing process to generate government reports. According to Panorama Consulting, organizational change management (OCM) strategies are crucial for preparing employees for new software and processes. The consultant often leads these initiatives by collaborating with management to address resistance, underscore the benefits of the new system, and secure leadership support. As the go-live date approaches, consultants provide intensive support: they may serve on-site or remotely with users during the initial execution of localized transactions, ready to troubleshoot issues (e.g., an invoice failing to transmit to SdI) and to ensure business continuity. Post go-live, consultants typically remain available for hypercare - closely monitoring system outputs, such as tax reports during the first month-end, rectifying any setup errors, and responding to user inquiries. This hands-on support during the critical cutover period constitutes an essential component of effective change management, reducing anxiety and fostering confidence in

the new ERP system.

ERP consultants play a crucial role in localization projects, with responsibilities that extend well beyond technical configuration. Their activities encompass requirements analysis, system design, compliance assessment, testing, user training, and change management. The objective is to ensure that a global ERP platform, such as IFS Cloud, is effectively adapted to the Italian context, fully compliant with national legislation and accounting practices, while maintaining the efficiencies of a standardized system.

As illustrated in **Figure 5.4**, the ERP localization process follows a structured methodology composed of four main stages: assessing local requirements, configuring the system, testing, and go-live. During the initial phase, consultants analyze Italian laws, fiscal norms, and operational processes to identify compliance needs. The configuration phase then introduces country-specific parameters, such as VAT codes, fiscal reports, and e-invoicing settings. Testing and user training validate system reliability and prepare end-users for the transition to live operations.

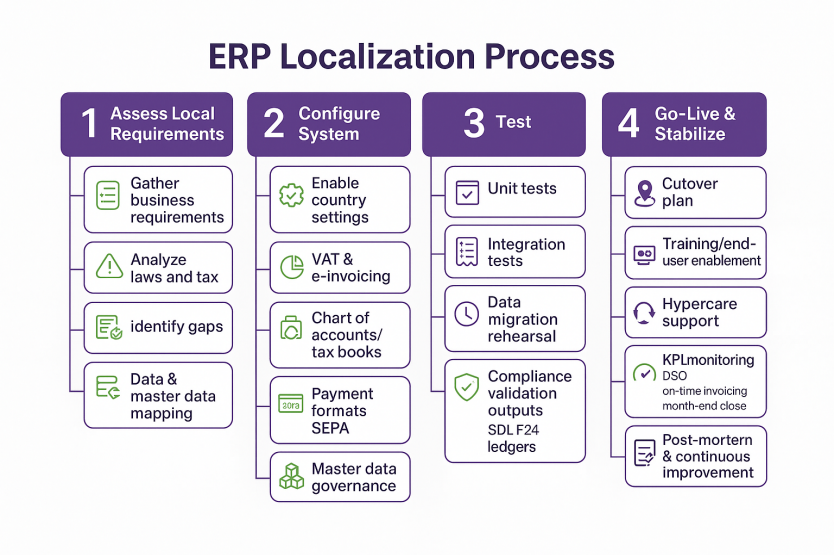

Figura 5.4: ERP Localization Process

To achieve this, a structured methodology is employed, which covers requirement collection, gap analysis, solution design, implementation, validation, and user enablement. This approach helps reduce the risk of non-compliance and supports smoother adoption by client organizations. The consultant's responsibilities across can be highlighted in five core areas of engagement: requirements, configuration, testing, training, and support. These activities ensure that each localization project not only achieves regulatory compliance but also promotes user adoption and process efficiency. The consultant therefore serves as both a technical specialist

and a business facilitator, guiding organizations through the complex intersection of technology, regulation, and organizational change.

5.4 Methodologies and Tools Used by Arcwide for IFS Localization

In delivering IFS localization projects (such as those for Italy), Arcwide employs a combination of structured implementation methodologies and specialized tools. These ensure that local requirements are met efficiently and consistently. Arcwide's methodology aligns with standard ERP implementation phases - often following a hybrid agile model - but with particular focus on localization at each phase. Meanwhile, Arcwide leverages both the built-in capabilities of IFS (the country-specific modules and configuration settings) and any necessary supplementary tools or partner solutions to address local needs. This section examines Arcwide's approach, with emphasis on the Italian IFS localization (drawing on the Italy Country Solution 24R2 document and external sources), including the specific workflows, modules and compliance functionalities involved. We also discuss how Arcwide handles versioning, release cycles and ensures full modular coverage of local requirements.

Implementation Methodology for Localization: Arcwide typically starts a localization project with a country-specific *Fit-Gap Analysis*. This activity involves using a structured checklist of local requirements - typically derived from IFS's country solution documentation and Arcwide's experience - to determine which standard functionalities meet local needs and where additional configuration are required. In the Italian context, Arcwide's consultants assess compliance needs such as SdI e-invoicing integration, VAT registers, unique invoice numbering, CONAI contributions, withholding taxes, and statutory tax reporting. Arcwide employs internal templates and best practices during this stage to ensure consistency across projects.

Following the *Fit-Gap Analysis*, the project advances to design and configuration phase. Here, consultants activate Italy-specific parameters within the IFS Cloud Localization Control Center. As shown in **Figure 5.5**, the system interface enables the selection and configuration of local features through dedicated settings. During this phase, consultants implement fiscal and reporting requirements by enabling pre-built modules provided in the Italian Country Solution - such as Italian Tax Reports, Enhanced Tax Books, and Italian e-Invoice - and by defining master data, fiscal codes, and routing rules according to IFS guidelines.

Arcwide's methodology emphasizes the reuse of standard localizations whenever possible. IFS provides an Italian Country Solution module (versioned with each release, e.g., 24R2 for year 2024 Release 2), which contains pre-built functionalities

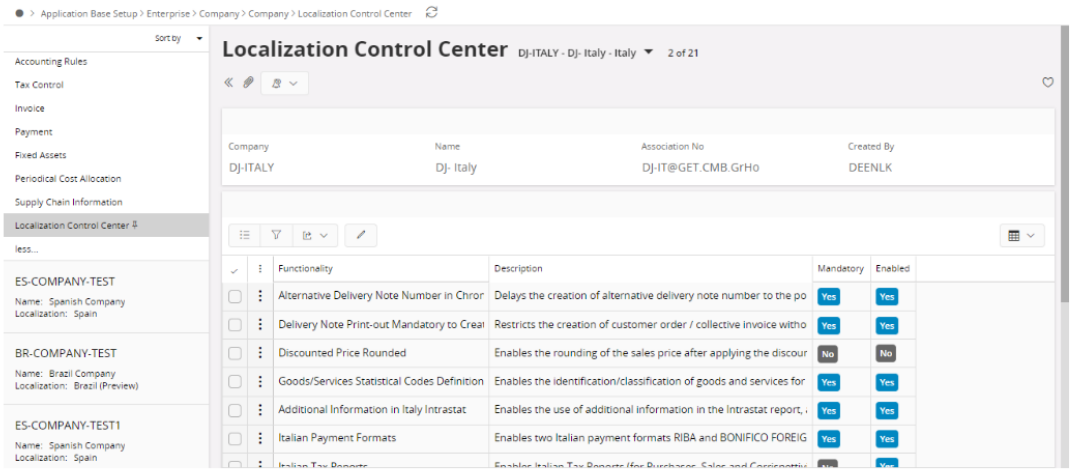

Figura 5.5: Select Localization Functionalities

for Italy. Arcwide consultants make full use of these standard modules rather than reinventing them. The philosophy is to 'configure first, customize second'. Thus, a significant part of Arcwide's work is mastering the IFS Italian Localization features and configuring them correctly for the client's data. The tools available in IFS Cloud for this include: parameter toggles, master data setup pages, and predefined templates. For example, to implement Italian tax reports, the consultant will enable 'Italian Tax Reports' and 'Enhanced Tax Books' features and then set up the tax book definitions and templates provided by IFS. Similarly, to implement e-invoicing, the consultation will enable the 'Italian e-invoice' feature and configure the necessary basic data like fiscal codes, process types, and routing rules as guided by IFS docs. Arcwide's methodology includes cross-checking each requirement against a solution in either standard IFS or a custom workaround, ensuring full coverage of local needs before proceeding with the build.

During the **development and testing phase**, Arcwide employs a range of tools to ensure that all configurations and integrations operate correctly within the IFS Cloud environment. The main platform used for these activities is the IFS application itself - specifically, the Enterprise Explorer and Aurena interfaces, which allow consultants to define system parameters, routing rules, and data mappings. When report adaptations are required, the IFS Report Designer is used to modify layouts and templates according to Italian fiscal standards.

For more technical development or advanced integrations, Arcwide consultants and developers rely on the IFS Solution Manager and the system's built-in APIs. A typical example is the configuration of IFS Connect, the middleware component within IFS Cloud that manages the exchange of XML files and communication

with external systems. As illustrated in **Figure 5.6**, a routing rule - such as 'Send-IT-E-invoice' - is created to direct the electronic invoice output to a designated folder or to a web service endpoint associated with the third-party exchange platform. This setup ensures that every XML e-invoice generated by the ERP is automatically routed to the Sistema di Interscambio (SdI) or other certified intermediaries, maintaining full traceability and compliance with Italian e-invoicing regulations.

Figura 5.6: Routing Rule : Send-IT-E-Invoice

Arcwide might use IFS's integration capabilities to connect with a certified Italian e-invoicing intermediary (since Italian law requires using the government's SdI, many companies use certified intermediaries to transmit files). The consultants test this integration by generating sample XML files in IFS and ensuring they are placed in the outbox and picked up by the interface. According to the Italy Country Solution document, 'the XML file is placed in IFS Connect outgoing folder... to be picked by the 3rd party service provider'. Arcwide validates that this hand-off works and that response files (acknowledgments or errors from SdI) can be received back into IFS.

Key Localization Functionalities (Italy as example): The Italian localization of IFS (with Arcwide implementations) encompasses a range of modules and functionalities, each addressing a compliance or business need. Some of the major Italian localization features and how Arcwide applies them are:

- **Electronic Invoicing (FatturaPA) and SdI Integration**: Italy mandates that all domestic invoices be issued in electronic XML format and transmitted to the Sistema di Interscambio (SdI) for validation. IFS Cloud support this process through built-in functionalities that generate invoices in the FatturaPA XML schema and manage their electronic transmission.

As shown in **Figure 5.7**, the system automatically includes key fiscal data - such as VAT details, payment information, and invoice numbering - ensuring full compliance with Italian regulations. Arcwide configures these features by enabling the Italian E-Invoice function and assigning the E-Invoice Italy process type to company and customer records. This setup allows each customer invoice to be converted into a compliant XML file and routed through the SdI, guaranteeing both automation and legal conformity within the IFS Cloud environment.

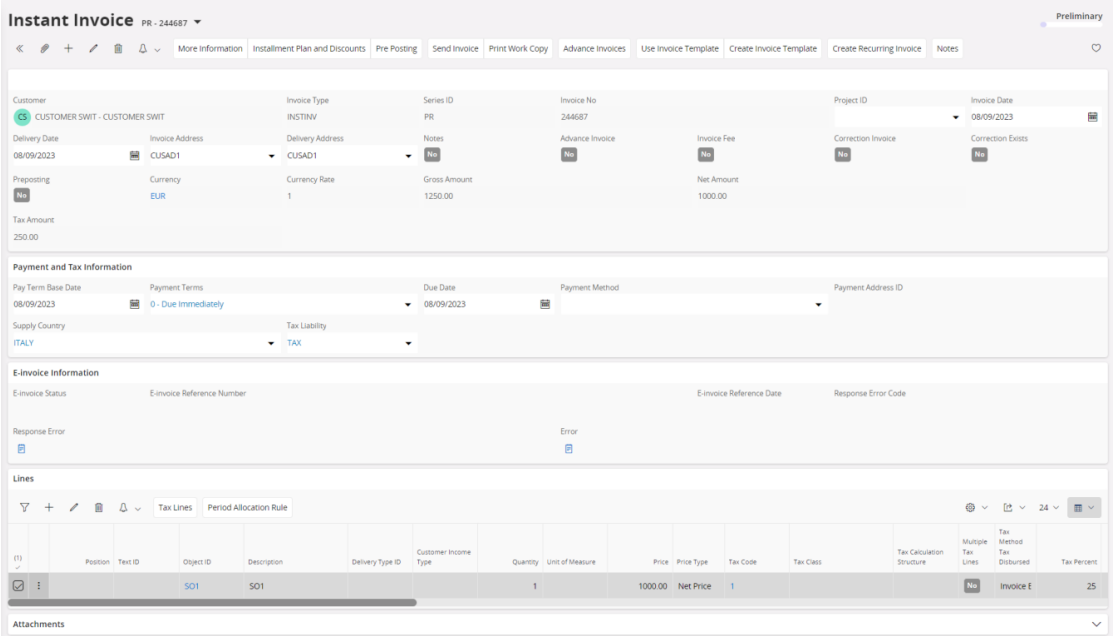

Figura 5.7: Send E-Invoice

This causes IFS to show a 'Send Invoice' command on invoices, which triggers XML generation and routing. The standard XML covers all required data fields (customer VAT, invoice lines, totals, etc.) in compliance with the FatturaPA format. Arcwide verifies that fields like CIG/CUP codes (public contract references) can be captured. For instance, IFS provides fields to enter CIG/CUP on the invoice, which then flow into the XML. If the client is a CONAI consortium member (packaging recycling consortium), IFS allows adding a fixed text in the XML's <Causale> section to indicate this; Arcwide ensures this is used where applicable. Once the XML is generated, Arcwide's setup via IFS Connect sends it to the SdI (often via a third-party provider's API). The Italy Country Solution defines the e-invoicing workflow as a complete exchange process between IFS Cloud, the Sistema di Interscambio (SdI), and third-party intermediaries. According to the documentation, "an IFS-style data file based on the FatturaPA format is created to send invoice data to the Tax Authority (SdI) through a certified external provider, which then communicates with the SdI and returns responses to IFS Cloud."

As illustrated in **Figure 5.8**, the workflow begins when IFS Cloud generates an XML invoice following the FatturaPA schema. The file is transmitted through IFS Connect to a third-party e-invoicing service provider - typically partners such as Pagero or Edicom - which handles the connection to the SdI. Once the invoice is validated by the Tax Authority, the response, including the protocol number or possible error codes, is sent back to IFS, where the invoice status is automatically

updated.

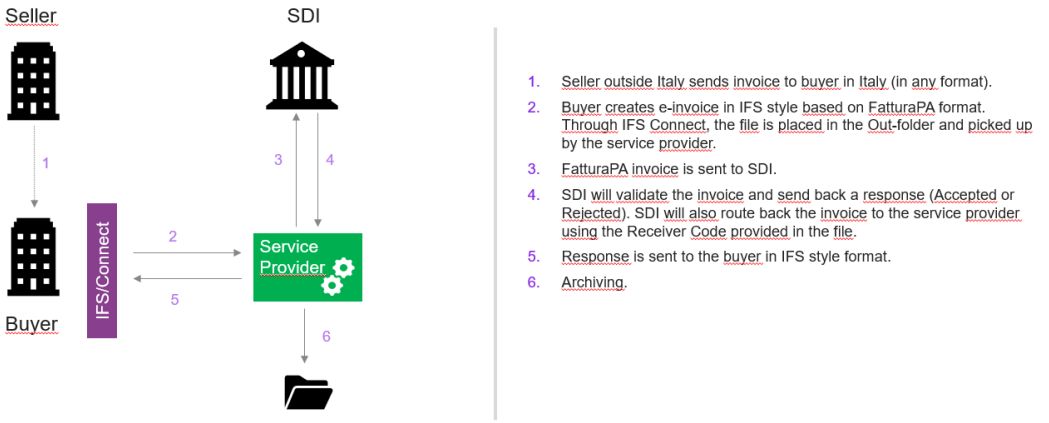

Figura 5.8: Solution Overview for Customer Invoices

Arcwide's consultants ensure the reliability of this feedback loop, configuring routing rules and response handling to guarantee full traceability. They also provide user training so that clients can monitor invoice statuses (e.g., Pending, Accepted, Rejected) and take corrective actions directly within the ERP interface. Since 2022, the same process has been extended to cover cross-border and supplier invoices, and Arcwide continues to adapt configurations accordingly. This end-to-end setup ensures that all invoices issued or received in Italy comply with the national electronic invoicing mandate and remain synchronized with IFS Cloud's reporting and archiving systems.

- **VAT Registers and Tax Books Configuration**: Italian companies are required to maintain detailed VAT registers - specifically the Purchase Ledger, Sales Ledger, and a 'Corrispettivi' (cash receipts) register - on a monthly basis and to produce statutory summaries for tax authorities. To meet these obligations, Arcwide implements the IFS Tax Books functionality within the Italian localization package.

As illustrated in **Figure 5.9**, the IFS cloud environment allows users to define multiple *Tax Books* to classify and accumulate transactions according to type. Each book (e.g. Sales, Purchase, Corrispettivi) can be customized by setting parameters such as tax direction, numbering series, and book base values. Consultants configure these registers so that every sales invoice is automatically recorded in a Sales Tax Book, supplier invoices in a Purchase Tax Book, and non-invoiced retail sales in a Corrispettivi book.

In **Figure 5.10**, the configuration of *Tax Codes per Tax Book* demonstrates how different VAT rates are associated with each register. This mapping ensures that taxable amounts, VAT percentages, and reporting logic are handled consistently

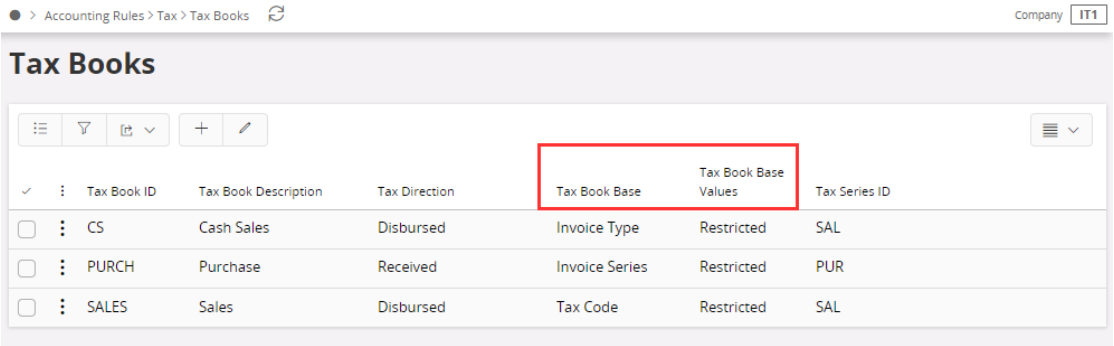

Figura 5.9: Tax Books

across transactions. To establish a reporting structure, Arcwide consultants use the Define Tax Book workflow (shown in **Figure 5.11**), which includes defining the tax book base, value, and series number, then linking each book to the relevant customer or supplier.

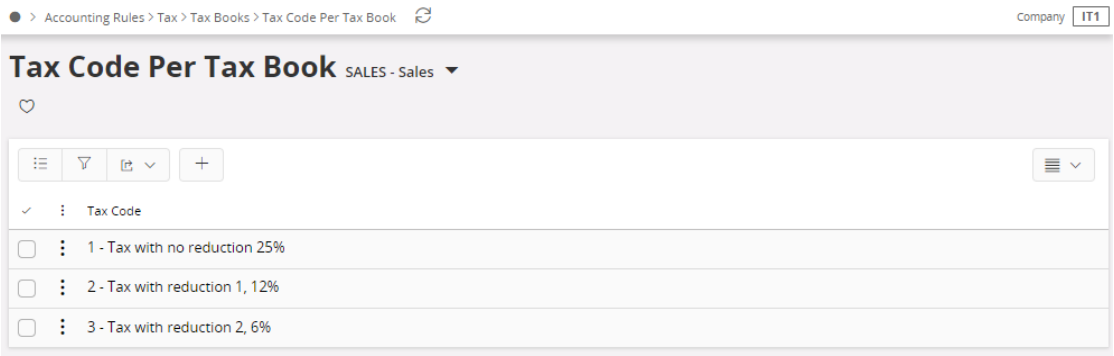

Figura 5.10: Tax Code per Tax Book

Once the configuration is complete, tax reports are generated through predefined templates. **Figure 5.12** shows an example of the *Italian Purchase Tax Book Report* template (GIT001), used to generate official VAT reports in compliance with Italian fiscal requirements. Consultants also verify that the printed Tax Book Cash Register output, as shown in **Figure 5.13**, aligns with statutory formats. These reports can be exported in PDF or XML for submission to tax authorities and are often retained for audit purposes.

The **Figure 5.14** displays the XML structure of a digital VAT communication, generated automatically by IFS for electronic submission to the Agenzia delle Entrate. This feature, part of the Enhanced Tax Books Handling functionality, ensures that all transactions are assigned progressive tax identifiers, guaranteeing compliance with Italian numbering and reporting rules.

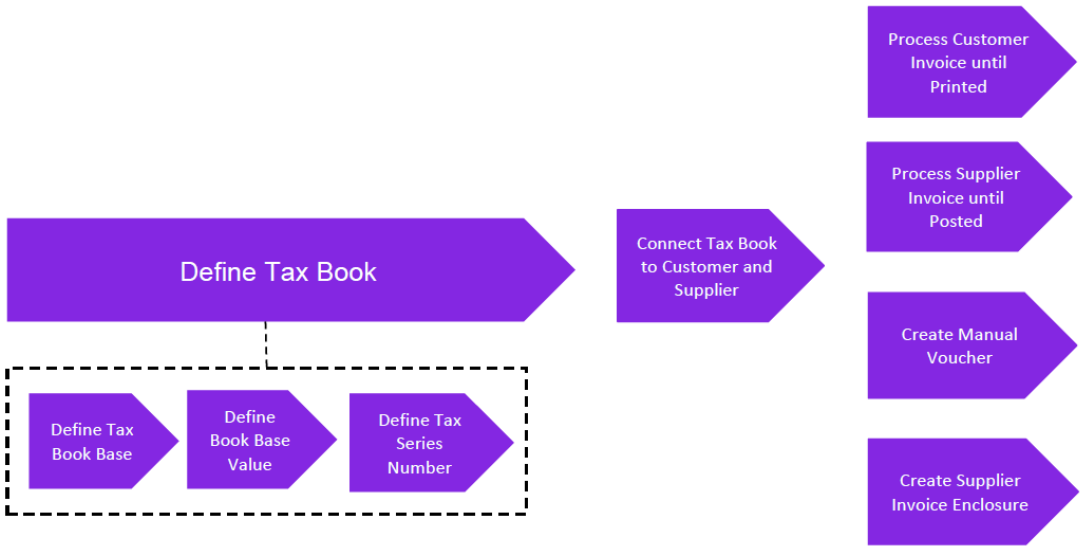

Figura 5.11: Process Overview

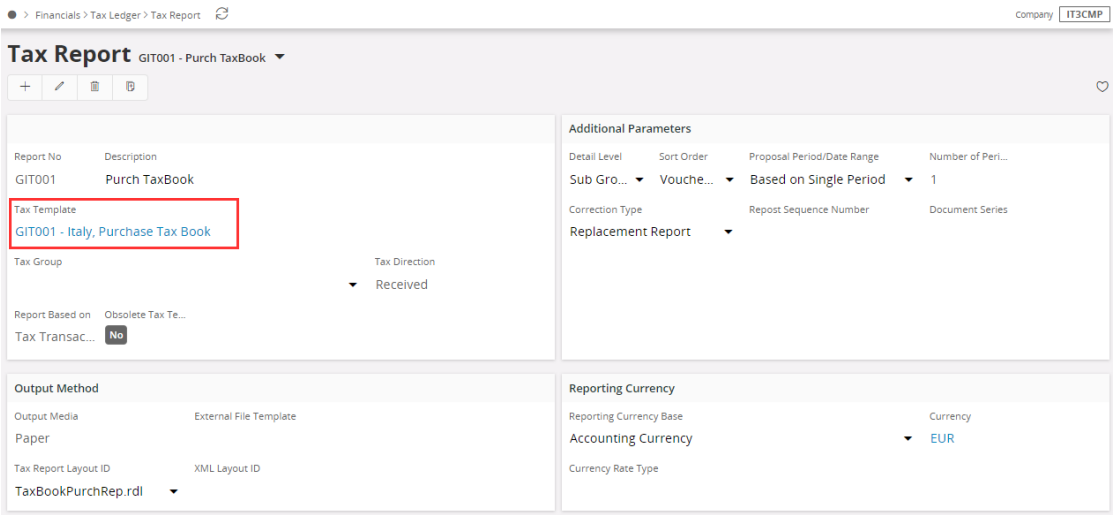

Figura 5.12: Tax Report

- **Withholding Tax and Year-End Certificate**: In Italy, certain types of payments - such as professional services fees, commissions, or freelance contracts - are subject to withholding tax ('ritenuta d'acconto'). In such cases, the paying company (as payor) must withhold a portion of the payment and remit it directly to the tax authorities on behalf of the payee. IFS Cloud supports this process

TAX BOOK CASH REGISTER

Company DAN ITALY
Dan Italy

Add1 Add2

From Date: 01/01/2018 To Date: 31/01/2018
Accounting Currency: EUR

Tax Series No	Tax Reg Date	Doc No	Doc Date	Type Of Doc	Currency Amount		Doc Total
		Tax ID No	Identity	Name			
	Tax Code	Tax Code Description			Net Amount	Tax Amount	
Tax Book:	CORR	Corrispettivi Tax Book					
30000	24/01/18	II 9700003	24/01/18	Instant Customer Invoice			1,250.00
			10034	Dan Czech Customer			
	1	Tax with no reduction 25%			1,000.00	250.00	
30001	25/01/18	CI TEST1	25/01/18	Instant Customer Invoice			1,000.00
			10034	Dan Czech Customer			
	1	Tax with no reduction 25%			800.00	200.00	
					1,800.00	450.00	2,250.00

Tax Code	Tax Code Description	Net Amount	Tax Amount	Doc Total
1	Tax with no reduction 25%	1,800.00	450.00	2,250.00
		1,800.00	450.00	2,250.00

Figura 5.13: Example of a Tax Summarized Report

through its integrated tax codes, payment routines, and reporting tools.

As illustrated in **Figure 5.15**, the configuration process begins by defining basic data and relevant tax parameters, followed by registering transactions, fetching tax details, creating the tax proposal, and finally generating the *Year-End Certificate*. Arcwide consultants set up specific withholding tax codes within IFS Cloud, indicating whether the tax should be calculated at the moment of invoice entry or at payment execution. The Italian localization further enhances this functionality, allowing withheld amounts to be reflected automatically within the e-invoice XML file.

When an invoice subject to withholding is processed, IFS adjusts the <ImportoPagamento> (amount to pay) tag in the XML to represent the reduced payment amount after deduction. Arcwide ensures that this behavior is correctly configured and validated, aligning with Italian fiscal standards. Moreover, the system can generate the official 'Year End Certificate (Italy)' report using template GIT005, which summarizes the total payments and tax withheld for each supplier or consultant.

This automation replaces manual processes and enhances accuracy, as the data derives directly from the system's accounts payable transactions. Arcwide also defines posting rules so that, during payment, the withheld portion is automatically booked to the appropriate tax account. The final step in the process is the issuance of the Certificazione Unica report, which companies must provide annually to all recipients of withheld payments. Through this integrated setup, Arcwide ensures

```
<iv:Fornitura xmlns:iv="urn:www.agenziaentrate.gov.it:specificheTecniche:sco:ivp"
"urn:ifsworld-com:schemas:tax_xml_handler_send_tax_xml_file_request">
<iv:Intestazione>
<iv:CodiceFornitura>IVP17</iv:CodiceFornitura>
<iv:CodiceFiscaleDichiarante>13188440153</iv:CodiceFiscaleDichiarante>
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</iv:Intestazione>
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<iv:CreditoAnnoPrecedente>50,00</iv:CreditoAnnoPrecedente>
```

Figura 5.14: Quarterly Tax Liquidation

Figura 5.15: Year End Certificate Tax Report Process

compliance, traceability, and transparency in managing withholding taxes, reducing administrative workload while meeting Italian fiscal obligations.

- **Italian Document Management (DDT and Related Workflows)**: A distof Italian business practice is the use of Delivery Notes (DDT - Documento di Trasporto), which accompany goods during shipment and are referenced on the corresponding sales invoices. Although not universally mandated by law, the DDT is a deeply rooted business practice in Italy, often serving as legal proof of delivery and forming the basis for subsequent invoicing.

The Italian localization of IFS Cloud fully supports this process through a

series of configurable parameters and workflows. As illustrated in **Figure 5.16**, the delivery cycle in IFS follows a sequential process - from reporting delivery and creating the delivery note, to printing, attaching it to goods, and initiating transport. Arcwide enables the functionality 'Delivery Note print-out mandatory to invoice', which prevents an order from being invoiced until its DDT has been printed. This ensures that each invoice includes the correct delivery note number and date, maintaining compliance with Italian documentation standards.

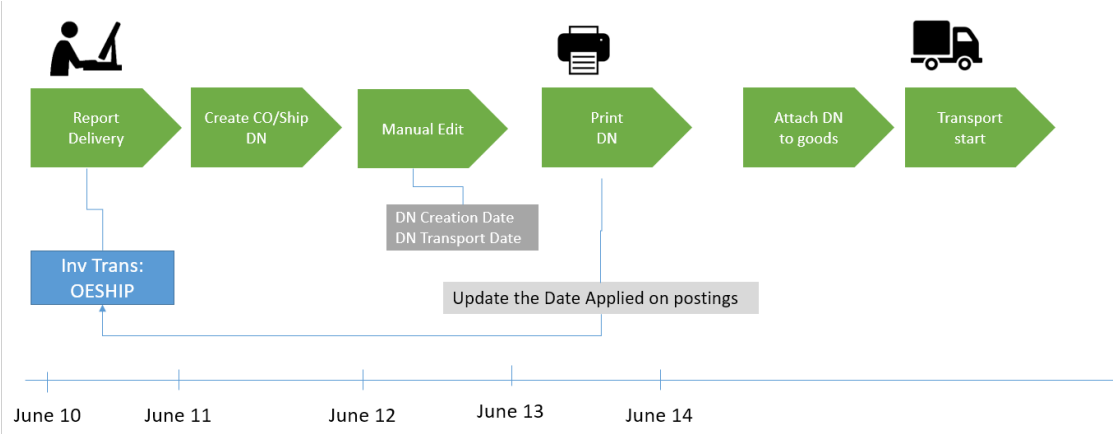


Figura 5.16: Delivery Note Process

For service-based transactions, where no physical delivery occurs, Arcwide configures the 'No Delivery Note for Services' option to skip DDT generation, while ensuring that mixed orders (combining goods and services) correctly produce delivery notes only for the tangible items. In some cases, clients also adopt digital DDT management processes; Arcwide supports this by advising on electronic workflows or integrating transport-specific numbering sequences when required. By aligning the ERP order-to-invoice process with Italian operational norms, Arcwide helps companies prevent invoicing discrepancies and ensures document traceability. The resulting configuration enhances both compliance and efficiency, guaranteeing that every Italian customer invoice is properly linked to its associated delivery documentation.

- **Local Payment Formats and Banking Integration**: Italy has distinctive payment methods and banking practices that require tailored ERP configurations. Among these, the *Ricevuta Bancaria (Ri.Ba.)* - a type of bank collection order for receivables - and specialized SEPA formats with Italian extensions are particularly relevant. The Italian Country Solution in IFS Cloud provides predefined payment format definitions to accommodate these local needs, which Arcwide activates and customized for each client.

As illustrated in **Figure 5.17**, the configuration process begins by connecting

predefined payment formats, such as Ri.Ba. or Bonifico Bancario, to company bank accounts, payment methods, and terms. Arcwide consultants enable the Italian Payment Formats feature in IFS, ensuring that all related parameters are properly linked to the company's financial setup. The process also includes defining and connecting CIG (Codice Identificativo di Gara) and CUP (Codice Unico di Progetto) fields, which are mandatory identifiers for payments involving public administration contracts. These fields, once configured, appear automatically in payment instructions and are exported within the SEPA payment file.

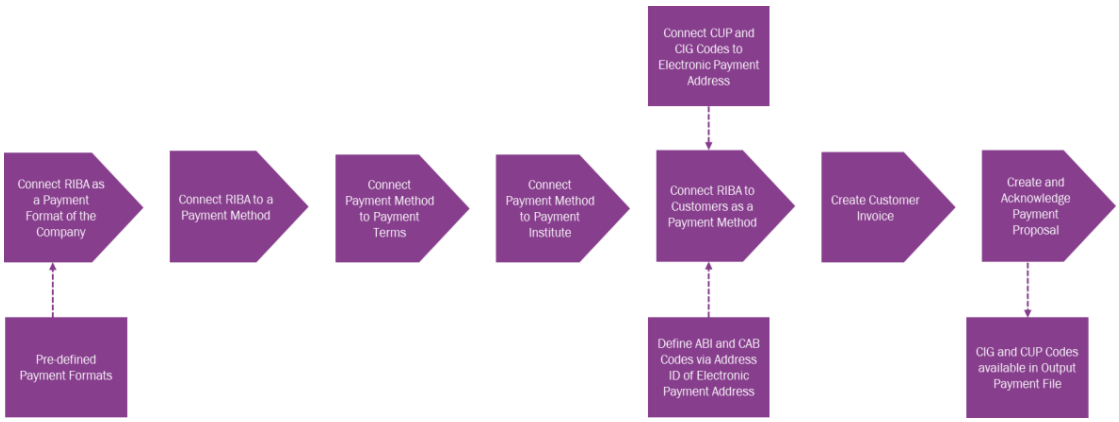


Figura 5.17: RIBA Process

Figure 5.18 shows the IFS interface where Ri.Ba is configured as a payment method. Arcwide validates this setup by generating and testing payment files to ensure that Italian-specific fields are correctly populated and transmitted to banks. For Ri.Ba. processes, the consultant activates the corresponding format, aligns it with Italian banking standards, and performs test exchanges with the client's banking network.

In some cases, Arcwide also supports F24 tax payments - common in Italy for remitting taxes via the government's unified form - by ensuring that data extracted from IFS can be mapped to external F24 systems. Through these localized configurations, Arcwide ensures that all payments comply with Italian financial regulations, enabling seamless integration between ERP processes and banking operations. This approach reduces manual interventions, enhances data accuracy, and ensures interoperability with national financial institutions.

Beyond these major areas, Arcwide covers numerous other Italian localization aspects using IFS tools: Intrastat reporting for EU trade (IFS has built-in Intrastat modules, configured to Italian specifications of the report), handling of special VAT cases like reverse changes and 'spit payment'. The split payment (scissione dei pagamenti) is a mechanism where VAT on invoices to certain public entities is paid directly to the treasury, rather than to the supplier. IFS handles this by

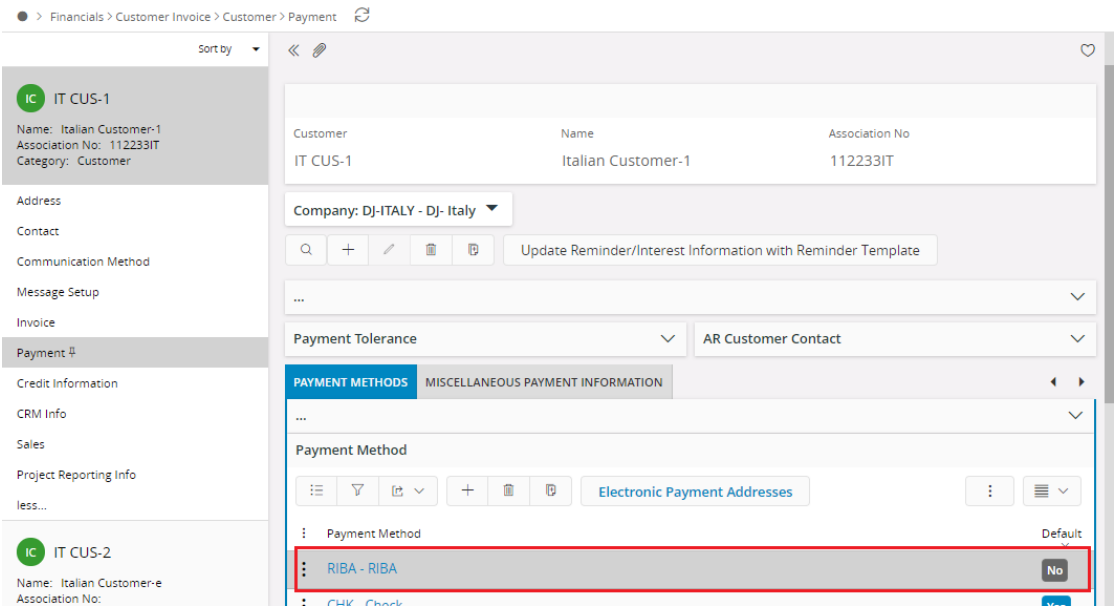


Figura 5.18: RIBA Selection

marking the tax code and adjusting the e-invoice output - Arcwide ensures clients know how to use a 'SPLIT' tax code onn relevant invoices so that, for example, the e-invoice XML shows zero VAT to pay by the customer. Arcwide's comprehensive approach means no key localization is left unmanaged.

Versioning and Release Cycle Management: In ERP localization, legal and fiscal requirements are i constant evolution. Changes in tax legislation, reporting formats, or compliance deadlines - such as Italy's updates to the esterometro or new digital archiving obligations - demand continuous system adaptation. Arcwide addresses this dynamic landscape by maintaining close alignment with IFS's product release cycle.

As shown in **Figure 5.19**, consultants operate within a framework that balances global integration with local responsiveness. Arcwide leverages this dual perspective to ensure that localization activities support both international system coherence and country-specific compliance. IFS Cloud follows a structured release model with quarterly service updates and two major releases per year, such as 24R1 and 24R2. Owing to its joint venture with IFS, Arcwide gains early access to upcoming localization enhancements, enabling proactive evaluation and deployment.

Figure 5.20 illustrates this workflow, highlighting how IFS Cloud integrates with the Sistema di Interscambio (SdI) through IFS Connect, while maintaining synchronization with periodic release cycles. Each release introduces updates - such as the inclusion of e-invoicing for cross-border transactions, the plastic tax, or the under-invoice ban - requiring validation in sandbox environments before

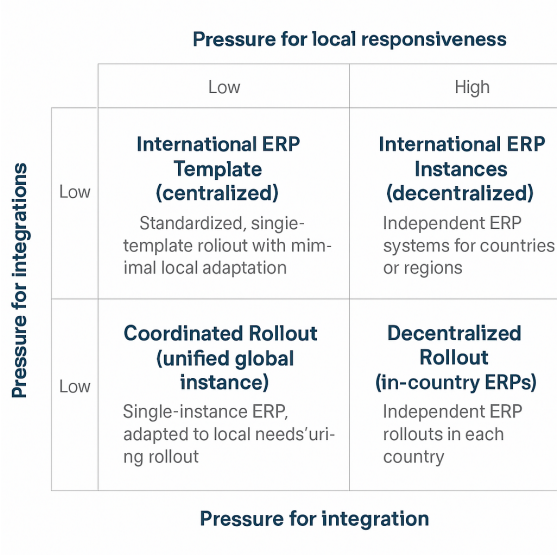


Figura 5.19: Consultants Responsibilities

client rollout. Arcwide consultants test these features using sample data to verify compliance and ensure continuity across versions.

For each client, Arcwide maintains a version control matrix documenting the installed IFS release, localization version, and any interim patches applied. In urgent cases where legal changes precede official updates, temporary configurations or custom fixes are implemented to preserve compliance until standardized solutions become available. Before any upgrade, regression testing is conducted to verify that Italian-specific functionalities - such as e-invoice generation, tax reporting, and withholding management - continue to function correctly.

This structured governance model is reinforced by Arcwide's collaboration with IFS's product teams, enabling rapid feedback and issue resolution. Consultants also prepare internal deliverables, including user guides and process flowcharts, to document how local requirements map onto ERP functionalities. These visual tools - such as-einvoicing or delivery note workflows - assist in both implementation and user training, ensuring that localized solutions remain robust, compliant, and user-oriented.

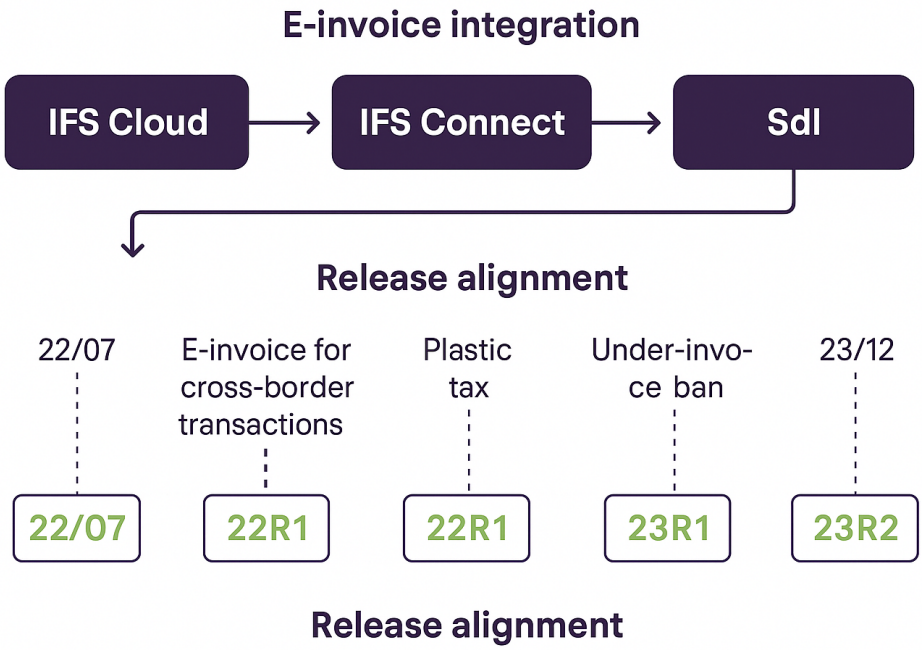


Figura 5.20: E-Invoice Integration

Capitolo 6

Internship Experience

6.1 Activities Performed: Overview

During the internship in Arcwide, the author served the role of an ERP Finance consultant trainee, contributing to the implementation of IFS Cloud ERP for finance. Arcwide is a leading systems integrator for IFS Cloud and the intern was embedded in a project team delivering an ERP rollout for a client in Italy. The intern's responsibilities spanned the typical phases of an ERP implementation lifecycle, under the supervision of senior consultants. Key activities included gathering business requirements, configuring the finance module to meet those requirements (especially local Italian needs), testing the system's functionality and supporting end-users through training and go-live preparation. This section provides an overview of those duties and how they align with the overall project methodology.

In the requirements phase, the intern assisted in analyzing the client's financial processes and Italian regulatory needs. This involved working closely with the client's finance department to understand their current practices (e.g., VAT reporting, customer invoicing, etc.) and identify gaps between the standard IFS Cloud finance module and local requirements. The consultant team (including the intern) documented these needs and mapped them to IFS Cloud's features or to potential customizations. This upfront analysis ensured that Italian fiscal and accounting obligations (such as those discussed in Section 5.2) were clearly identified.

Next, the intern participated in configuring the IFS Cloud Finance module to implement the agreed-upon solution. Under guidance, the intern learned to navigate the IFS Localization Control Center and other relevant configuration pages to activate Italy-specific functionalities. For example, the intern helped set the company's profile to 'Italy' localization (thereby enabling Italian features) and configured basic data like the chart of accounts, VAT codes, tax books and

invoice series needed for compliance. Much of this work involved using Arcwide's internal documentation and the IFS Cloud country solution guides to apply settings correctly. The intern also supported any necessary data migration or master-data setup (such as importing customer/vendor data, ensuring VAT registration numbers and other fields were populated as required by Italian e-invoice standards.

Throughout the project, the intern was heavily involved in testing. This included writing test cases for finance processes (e.g., posting an Italian sales invoice and verifying that the VAT was recorded in the correct register with the proper numbering sequence). The intern executed unit tests and integration tests to ensure that localized features (like electronic invoicing, withholding tax calculations, etc.) were functioning as expected. When issues arose (for instance, an invoice not picking up the correct tax code or an error in generating the e-invoice XML), the intern collaborated in troubleshooting - checking configuration, consulting IFS documentation, and sometimes liaising with Arcwide's senior experts to apply fixes. **User Acceptance Testing (UAT)** was another area of involvement: the intern helped the client's key users run their scenarios in the new system, gathering feedback and adjusting configurations or providing clarifications as needed.

An important activity was user training support. The intern assisted in preparing training materials for end-users, focusing on how to perform daily finance operations in IFS Cloud under the new system. For example, the intern demonstrated to the client's accountants how to enter supplier invoices that involve withholding taxes, how to generate the VAT register reports and how the new e-invoice submission process works. These training sessions allowed the intern to develop communication skills and deepen their understanding by teaching others. During the go-live cutover and immediately after, the intern also provided on-site support, helping users with any difficulties and ensuring that the first monthly financial close on the new ERP went smoothly.

The internship provided a comprehensive view of the ERP implementation lifecycle from a financial standpoint. The intern served as a liaison between technical configuration and business requirements, translating Italian legal and accounting obligations into concrete system settings and verifying that outputs—reports, postings, and interfaces—were compliant and reliable. In practice, the contribution spanned the full consulting spectrum: requirements analysis, configuration, text execution, user enablement and go-live support. The following sections detail these activities with specific reference to Italian localization features.

6.2 Localization of the Finance Module for the Italian Market

A core focus of the internship was on localizing the IFS Cloud Finance module for the Italian market. 'Localization' in this context refers to adapting the standard, internationally used ERP system to comply with Italy's specific financial regulations and business practices. Italy has a complex fiscal environment, with numerous requirements for how transactions are recorded, reported and interfaced with government systems. The intern, as part of Arcwide's project team, undertook a technically detailed analysis and configuration of features to ensure the ERP would meet these local requirements. This section describes the key Italian-specific features addressed, including VAT registers and tax books, fiscal reports, electronic invoicing (FatturaPA), and the SdI integration, as well as the handling of withholding taxes, split payments, and Black List/Esterometro reporting.

Vat Registers and Tax Book: Italian VAT law (D.P.R. 633/1972) requires companies to maintain official ledgers of all sales and purchase invoices (so-called registri IVA), numbered sequentially by date. To meet this, IFS Cloud's Italy localization provides a Tax Book mechanism. The intern configured Sales Tax Books and Purchase Tax Books in the system - essentially defining that all sales invoice transactions feed into a 'Registro IVA Vendite' and purchases into 'Registro IVA Acquisti'. Each transaction is assigned a tax series number when it's entered or printed, ensuring a progressive and gapless numbering system in accordance with the tax authority's rules. For example, all customer invoices might be assigned a prefix 'S' and a sequential number for the sales register. The system is configured to generate a protocol number when an invoice is posted (for supplier invoices) or printed (for customer invoices), which will appear on the official VAT ledger reports. The intern had to enable the 'Enhanced Tax Books Handling (Invoice Type and Series)' parameter and define the appropriate tax series IDs (for example, differentiating between invoices and credit notes). This setup produces the legally required monthly VAT books: IFS Cloud can print the Purchase Tax Book and Sales Tax Book reports showing all entries with their tax series numbers, ready for submission or archiving.

In addition to the detailed ledgers, Italy mandates summary VAT reporting. The intern configured the Tax Summarized Report in IFS, which aggregates the totals from each VAT book for a period. This corresponds to the periodic VAT liquidation (LIPE) summary that Italian companies are required to file (typically on a quarterly basis). The IFS solution required linking each detailed tax book to this summary report template so that all pertinent data rolls up correctly. By ensuring the tax books and reports were properly defined and connected, the intern helped the client generate compliant fiscal reports covering VAT transactions on

a regular basis. These fiscal reports include the monthly registers (registri) for sales, purchases, and any special register (e.g., corrispettivi for cash receipts), as well as the quarterly VAT summary that facilitates the official communication of VAT balances to the tax authorities. The configuration and testing of this area were crucial, as errors in numbering or omissions in the registers could lead to non-compliance.

Electronic Invoicing (Fattura Elettronica) and SdI Integration: One of the most critical localization components in recent years has been Italy's mandatory electronic invoicing systems. Since January 2019, Italian legislation has required that all business-to-business (B2B) and business-to-government (B2G) invoices be issued in the FatturaPA XML format and transmitted through the government-managed Sistema di Interscambio (SdI). This regulation, part of Italy's broader digitalization initiative, has significantly influenced ERP design and localization practices.

As illustrated in **Figure 6.1**, the e-invoice workflow in IFS Cloud is closely aligned with the continuous evolution of Italian regulatory requirements. The process involves generating the FatturaPA XML file, transmitting it to SdI via a certified intermediary, and managing the response messages within the ERP. During the intership, the author was directly involved in enabling and testing this functionality to ensure that the system could automatically produce and exchange compliant e-invoices.

In practice, the configuration began with activating the Italian E-Invoice feature within the IFS Cloud and defining the routing logic through IFS Connect, the system's integration middleware. The intern configured the process type E-invoice Italy and linked it to customer profiles, ensuring that every invoice created for an Italian client was automatically converted into a FatturaPA XML file and queued for transmission. ROuting rules were also customized to detect outgoing invoices and format them according to the government's schema.

A key part of the task involved entering the client's Fiscal Code and Transmission ID in the system's e-reporting configuration, ensuring that these identifiers were embedded correctly within each XML file. By testing multiple transmission scenarios in collaboration with Arcwide's senior consultants, the intern contributed to verifyin the integrity of data mapping, the accuracy of generated XML files, and the reliability of communication with the SdI gateway. This work demonstrated how ERP localization extends beyond technical setup - it represents a continuous process of compliance assurance in a changing regulatory environment.

Handling of Withholding Taxes (Ritenuta d'Acconto) and Year-End Certification: Italian tax regulations oblige businesses to act as withholding agents for certain payments - for example, professional services fees, contractor payments or commission to agents. In these cases, a portion of the payment (typically 20% or other rates depending on the nature of service) must be withheld by the payer

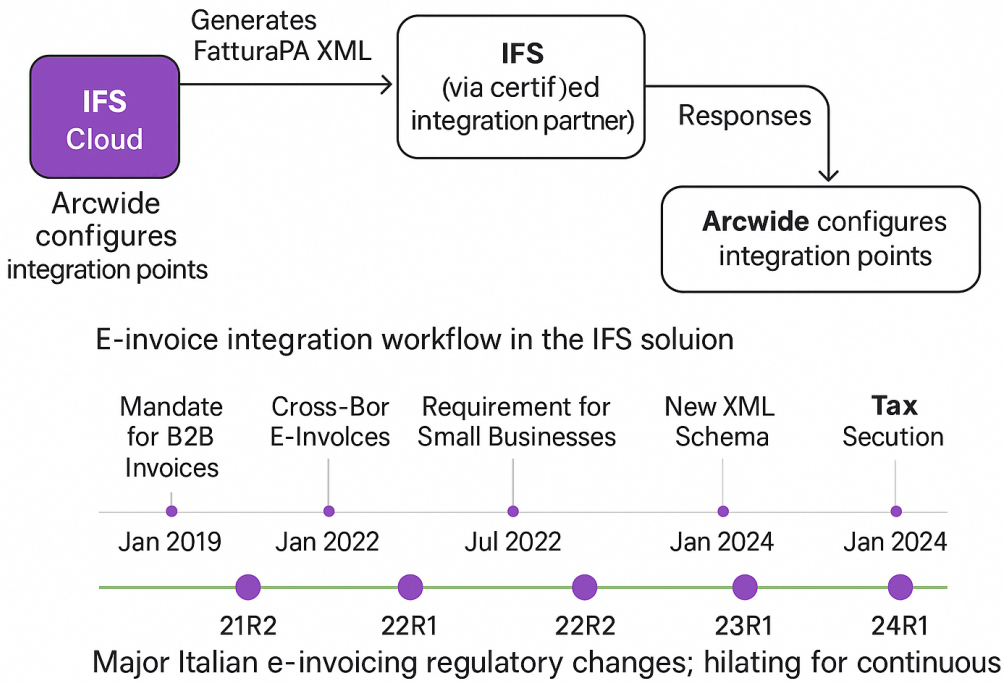


Figura 6.1: E-invoice Integration Workflow in IFS Cloud and Alignment with Italian Regulatory Updates

and later paid to the government on behalf of the payee. The intern addressed this requirement by utilizing IFS Cloud's functionality for tax withholding. The system needed to calculate the withholding at either invoice entry or payment tie, record it and allow reporting on it. First, the intern configured Withholding Tax Codes in the ERP - each code representing a type of withholding (e.g. one for professional services at 20%). These codes were set , as shown in **Figure 6.2** with Tax Method = 'Payment' (meaning the liability is realized upon payment) in cases where the tax should only be recognized when the invoice is paid. For instance, an invoice from an Italian freelancer would be entered gross, but when paid, the system would automatically post the 20% withheld amount to a payable tax account.

The localization work also involved setting up the supplier tax withholding functionality, ensuring full compliance with Italian fiscal law. The intern linked each supplier subject to withholding to the correct tax code and income type, defining how the withholding was calculated and reported.

As shown in **Figure 6.3**, IFS Cloud's Italian solution includes the Year-End Withholding Tax Certificate (Certificazione Unica), which summarizes annual payments and tax amounts withheld for each supplier. The intern activated this

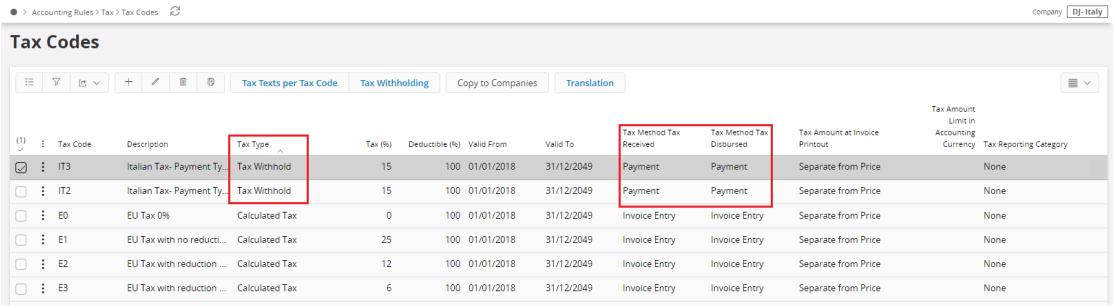
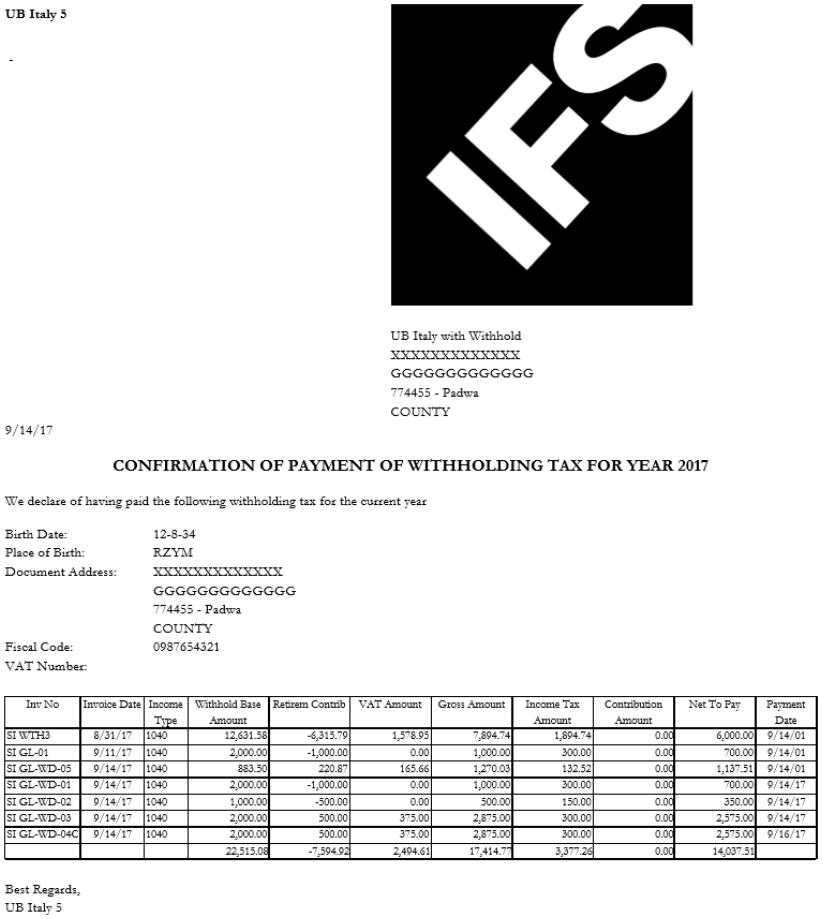


Figura 6.2: Define Tax Codes

feature, verified the accuracy of the generated report, and ensured that all legally required information - supplier data, tax details and company declarations - was correctly displayed.



UB Italy 5

-

UB Italy with Withhold
XXXXXXXXXXXXX
GGGGGGGGGGGGG
774455 - Padwa
COUNTY

9/14/17

CONFIRMATION OF PAYMENT OF WITHHOLDING TAX FOR YEAR 2017

We declare of having paid the following withholding tax for the current year

Birth Date: 12-8-34
Place of Birth: RZYM
Document Address: XXXXXXXXXXXXX
GGGGGGGGGGGGG
774455 - Padwa
COUNTY
Fiscal Code: 0987654321
VAT Number:

Inv No	Invoice Date	Income Type	Withhold Base Amount	Retirem Contrib	VAT Amount	Gross Amount	Income Tax Amount	Contribution Amount	Net To Pay	Payment Date
SI WTH3	8/31/17	1040	12,631.58	-6,315.79	1,578.95	7,894.74	1,894.74	0.00	6,000.00	9/14/01
SI GL-01	9/11/17	1040	2,000.00	-1,000.00	0.00	1,000.00	300.00	0.00	700.00	9/14/01
SI GL-WD-05	9/14/17	1040	883.50	220.87	165.66	1,270.03	132.52	0.00	1,137.51	9/14/01
SI GL-WD-01	9/14/17	1040	2,000.00	-1,000.00	0.00	1,000.00	300.00	0.00	700.00	9/14/17
SI GL-WD-02	9/14/17	1040	1,000.00	-500.00	0.00	500.00	150.00	0.00	350.00	9/14/17
SI GL-WD-03	9/14/17	1040	2,000.00	500.00	375.00	2,875.00	300.00	0.00	2,575.00	9/14/17
SI GL-WD-04C	9/14/17	1040	2,000.00	500.00	375.00	2,875.00	300.00	0.00	2,575.00	9/16/17
			22,515.08	-7,594.92	2,494.61	17,414.77	3,377.26	0.00	14,037.51	

Best Regards,
UB Italy 5

Figura 6.3: Year-End Withholding Tax Certificate

By automating this process within the ERP, the system could generate certificates compliant with *DPR 600/1973, art.25*, reducing manual effort and ensuring timely issuance by the March 16 deadline. This configuration helped the client maintain full traceability of withheld taxes and streamline the preparation of the annual Modello 770 filing.

Split Payments (Scissione dei Pagamenti): In Italy, the *split payment* mechanism requires that certain customers - particularly public administration and large corporations - remit VAT directly to the Treasury rather than to the supplier. This system ensures that VAT collected from transactions involving public entities is paid immediately to the state.

As illustrated in **Figure 6.4**, the configuration in IFS Cloud involves tagging specific VAT codes or invoices with the text 'SPLIT' to identify transactions subject to this rule. During the internship, the intern configured and testes this functionality, ensuring that the system correctly calculated and posted VAT amounts without transferring them to the supplier's receivable.

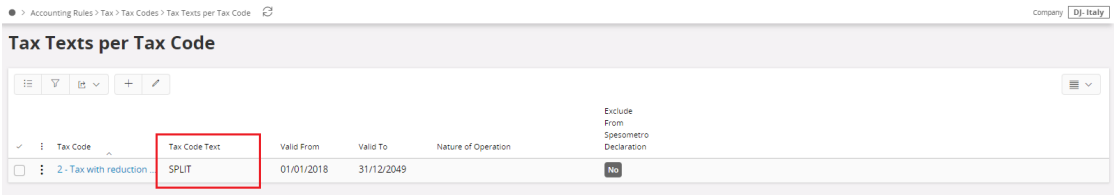


Figura 6.4: Split Payment Selection

This setup guarantees compliance with Italian fiscal law while maintaining transparency in financial postings, preventing discrepancies in VAT reporting for clients operating with public sector customers.

The intern applied this configuration for the VAT codes used with public sector customers. When such an invoice is processed, the system then internally applies a withholding tax technique to effectively reverse the VAT from the supplier's receivable and place it in a separate account, indicating that it's to be paid by the customer to the government. The intern tested that a split-payment invoice would still appear on the government. The intern tested that a split-payment invoice would still appear on the VAT sales register, but flagged appropriately, and that it would not count the VAT as a part of the company's own payable VAT (since the company won't receive that portion). Moreover, Italy had reporting implications: in the older Spesometro (annual sales/purchase listing) and now within the e-invoicing system, split payment transactions are identified specially. The intern confirmed that when generating the Spesometro/Esterometro report from IFS (for periods before the full e-invoice mandate), the split invoices were marked with an 'S' in the appropriate field (signifying non-recoverable VAT by

the supplier). This ensures compliance with the 'scissione dei pagamenti' rules introduced by Italian legislation (e.g. Law 190/2014 for public entities).

'Black List' Transactions and Esterometro: Before the comprehensive e-invoicing system was implemented, Italy enforced specific reporting for transactions with entities in certain foreign jurisdictions, informally referred to as 'Black List' countries (tax havens). Companies were required to report sales and purchases involving those jurisdictions periodically. In recent years, this requirement was subsumed into more general reporting (the Esterometro for all cross-border invoices). By 2022, as mentioned, the Esterometro itself was abolished in favor of using the SdI system for all invoices. During the project, the intern needed to understand these historical requirements because the client still wanted to ensure compliance with any remaining obligations up to the cutoff date. In practice, IFS Cloud's solution for Italy included the Spesometro Declaration function, which covers the reporting of invoices not handled by SdI - essentially, foreign invoices or any transactions requiring special declaration. The intern reviewed this feature: one can generate a proposal for a period and it will include all such transactions, marking those that were with non-EU or black-list counter parties with the appropriate document types (e.g. 'TD10' or 'TD11' codes). While this became less central due to the changes in 2019-2022, the intern ensured the client was aware of how the system handles Black List/Esterometro reporting in case they needed to use it for historical data or any exceptional cases. Essentially, any invoice that did not flow through SdI (e.g. a 2021 invoice to a San Marino customer or a late adjustment) could be picked up by the Spesometro/Esterometro report. The intern's familiarity with these settings added value by covering a compliance are that, while phasing out, was part of the overall Italian localization landscape.

Other Italian Localization Features: Beyond core financial configuration, the intern also worked on several complementary localization features described in the IFS Country Solution for Italy. These included the setup of local payment formats, virtual stamp duty, and Intrastat reporting.

For payment management, the Ri.Ba. (bank collection) format was enabled for accounts receivable, allowing the client to generate electronic collection files to be sent to banks. This required configuring the Ri.Ba. payment method and entering customer-specific bank identifiers (ABI/CAB codes).

As illustrated in **Figure 6.5**, the *Bollo Virtuale* (virtual stamp duty) configuration was also reviewed. This tax applies to invoices exceeding a certain amount and can be handled automaticcaly in IFS Cloud by associating a specific tax code to qualifying invoices. The intern verified that the setup allowed proper posting and reporting of the virtual stamp tax, ensuring compliance with Italian accounting requirements.

Lastly, the intern reviewed the Intrastat module for EU trade reporting, confirming that Italy's country-specific code lists and reporting frequency were properly

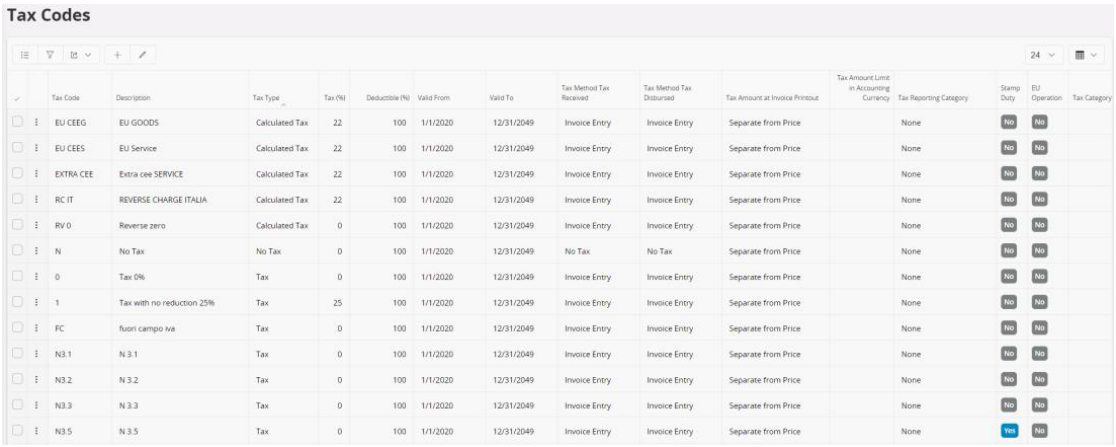


Figura 6.5: Stamp Duty Selection

supported within IFS Cloud. These activities contributed to refine the overall localization coverage and aligning the ERP system with Italian fiscal and operational practices.

The next section will discuss how some of these specific requirements were managed in practice and the strategies used by the consultant to meet them, including references to key Italian mandates that governed these needs.

6.3 Management of Specific Requirements (VAT Registers, Analytical Accounting, Withholdings

This section examines how the project team (and the intern) managed a few specific requirements in practice. We focus on three exemplary areas - VAT registers and reporting, analytical accounting and withholding taxes - illustrating the configuration strategies and consultant deliverables associated with each. Throughout, we reference the relevant Italian statutory mandates that shaped these requirements and describe how the intern contributed to fulfilling them.

VAT Registers and Fiscal Reporting: TO manage the VAT register requirement, the consultant team took a configuration-driven approach using IFS Cloud's standard features (as described earlier). Italian law requires that all invoices be recorded in chronological order, without gaps (D.P.R. 633/72, Art. 23 for sales, Art. 25 for purchases). In execution, the intern assisted in designing the scheme for invoice numbering (Protocollo IVA) that the system would utilize. One strategy was to utilize separate invoice series codes for different document types - e.g., series 'FA' for fatture (sales invoices) and 'NC' for note di credito (credit notes) - to ensure

each had its own sequence. The intern configured these series in IFS and mapped them to the tax books (sales and purchase registers). The deliverable included a configuration document listing each tax book and its associated series, as well as a sample printout of a register to demonstrate the formatting and sequence.

During UAT, Italian accountants from the client's team scrutinized these outputs. One specific requirement was that the printed register report must display the year and register name and page numbering, as per Italian accounting standards. The intern coordinated with the technical team to adjust the report layout template to include those headers. Additionally, to comply with monthly closure of registers, the intern provided the client with a procedure (as part of project deliverables) on how to officially close a period: this involved generating the final register report for the month, having it reviewed and then locking that period's sequence (to prevent late entries from disrupting the sequence). The consultant also ensured the ERP was set to prevent date inconsistencies - for example, not allowing an invoice dated in a closed month to get a number out of sequence.

Another aspect was the Quarterly VAT (LIPE). While IFS produces the Tax Summarized Report, the intern had to verify that it contained all needed data for filling the official F24 form or online submission (like total VAT collected, VAT paid, credits, etc.). Where the standard output differed slightly from the exact Italian form, the intern prepared an Excel bridging template as a deliverable - essentially a spreadsheet where the numbers from the ERP report could be plugged into the official return format. This was a pragmatic solution to manage any format gaps without further customizing the ERP. In cases like this, consultants deliverables often include such job aids or instructions to ensure the client can meet requirements using the system's output.

Analytical Accounting (Contabilità Analitica): Although analytical accounting (management accounting) is not mandated by law in the same way as financial accounting, it is a common requirement for Italian companies to track costs and revenue by various dimensions (cost centers, projects, etc.). The intern identified this need when the client's controlling team sought to utilize the ERP for internal profitability analysis. To address this, the consultant team configured IFS Cloud's code parts (accounting dimensions). The strategy was to activate additional code segments in the accounting string - for example, a code part for 'Cost Center' and one for 'Product Line'. The intern assisted in designing the cost center hierarchy and loading it into the system. A key deliverable was the Chart of Accounts and Analytical Dimensions documentation, which listed each account and the analytical dimensions required for posting (for example, expense accounts requiring a cost center).

From an Italian context, companies often maintain an analytical ledger parallel to the general ledger. The intern leveraged IFS's standard functionality (which supports capturing dimensions on each journal entry) to enable an analytical ledger

without a separate module, essentially. The intern configured allocation rules and reporting templates so the client could produce cost reports (e.g. expenses by department). Although this was not a direct legal requirement, it was crucial for the client's internal reporting and was handled as part of localization, as Italy's management culture often expects this capability. The intern provided training to the client's controllers on how to input analytical codes during transaction entry (for example, selecting a cost center when posting an invoice). An example scenario managed involved allocating a single supplier invoice (such as a utility bill) across multiple cost centers; the intern demonstrated how to use distribution templates for this purpose.

In terms of consultant deliverables, the intern helped prepare an Analytical Accounting setup guide, which included screenshots of the ERP configuration (list of active code parts, examples od data entry screens with analytic fields) and sample reports (like a Profit & Loss by cost center). Although not required by law, this effort highlights how the ERP consulting role must also tailor the system to meet client-specific management needs, in addition to statutory localization.

Withholding Taxes (Ritenute) Management: Managing withholding taxes was a critical requirement dictated by Italian law (DPR 600/1973). The intern managed this by ensuring the ERP was configured correctly (as detailed in 5.2) and by developing clear processes for the client's accounts payable team. One major challenge was that the withholdings in Italy involve multiple steps and stakeholders: the supplier issues an invoice indicating a withholding should apply, the company pays the net amount, and later pays the withheld amounts via models CU and 770.

To handle this, the intern and team configured IFS to split the payment automatically. However, they also had to educate the client on operational steps. For example, the supplier invoice entry: the intern's documentation instructed users to select the appropriate withholding code at invoice entry if the system didn't default it (IFS can default from a supplier master, but users could override). The intern also configured a check: if a supplier subject to withholding was entered without a withholding code, a warning message would be prompted (this was achieved through a customization in the form of a custom event in IFS). This prevented accidental omissions.

When it came to paying the taxes (typically through form F24 monthly), the ERP doesn't directly file F24 but provides the amounts. The intern prepared a custom Withholding Tax Report (using IFS's Tax Report framework) that lists all withholding tax amounts due for a period, categorized by the government tax codes (e.g. '1040' for professional services). This report was aligned with what the client's fiscal consultant would need to fill in the F24 payment form. By doing so, the intern bridged the gap between system data and the government form.

A noteworthy deliverable was the Year-End Withholding Procedure document. It outlined how to generate the Certificazione Unica from IFS (the Year End

Certificate report) and the steps to verify it against ledger accounts. The intern cross-referenced the output with legal requirements - e.g. ensuring it included the supplier's tax code, total paid, total withheld and any social security contributions withheld. The legal deadline for distributing these certificates (March 16) and filing the 770 (by October) was highlighted in the document, emphasizing to the client the timeline they need to adhere to.

In the course of managing withholdings, the consultant team also had to address edge cases. One example is the cost of a professional's invoice (notula) that is issued net of withholding (standard in Italy: the professional might not issue an invoice until after receiving payment; instead, they issue a pro-forma notula). The intern learned that the ERP could handle this by recording the notula and then the payment with withholding and finally the actual invoices is recorded for the paid amount. This is a complex process, so the intern created a step-by-step guide for the client on how to manage pro-forma invoices for withholdings—a deliverable that combined both system steps and compliance notes.

Throughout these examples - VAT registers, analytical accounting, and withholding - a common strategy was evident: utilize standard ERP functionality as much as possible, configure it to meet local needs, and provide additional guidance or minor extensions to address any gaps. The intern's role was to gather the exact requirements (often referencing Italian mandates, such as the VAT law or tax decrees) and ensure the system configuration aligned with them. When certain specifics were not fully covered by the out-of-the-box solution, the intern worked on workarounds (such as supplementary reports or user procedures) to bridge the gap. Each requirement came with consultant deliverables like configuration documents, testing evidence and user instructions, which together ensured that the client's finance department could operate compliantly and efficiently in the new system.

By managing these specific requirements, the intern gained insight into how granular and detailed an ERP localization can get. Every legal rule (from invoice numbering to withholding percentages) must be translated into system behavior. The experience also underscored the importance of staying up-to-date with Italian fiscal mandates; the consultant must continuously interpret law changes and sometimes explain to clients how the ERP will accommodate them. In the next section, we will discuss the broader tools used and challenges encountered (including regulatory changes), along with the solutions implemented to address those challenges.

6.4 Tools Used, Challenges Encountered and Solutions Implemented

Implementing an ERP localization requires not only functional knowledge but also the use of various tools and resources, as well as strategies to overcome the

challenges that arise. During the internship, the author utilized several tools to carry out tasks, and the project faced common localization-related challenges - from regulatory complexity to technical integration issues - which the team addressed with specific solutions. This section describes the key tools used by the intern, the main challenges encountered in localizing the ERP for Italy and how those challenges were resolved.

Tools and Platforms Used:

- **IFS Cloud Application:** The primary tool was, of course, the IFS Cloud ERP environment itself. The intern spent a significant amount of time in the IFS user interface - configuring parameters in the Company Localization settings, using the Financial Modules (General Ledger, Accounts Payable/Receivable, Tax Ledger) and testing transactions. The intern also accessed the IFS Solution Manager for integration setup (like defining Routing Rules in IFS Connect for e-invoice outbound processing). Familiarity with the ERP's navigation and configuration screens was essential and quickly developed during the internship.

- **IFS Documentation Portals:** Arcwide provided access to the official IFS Documentation (such as the Country Solution Italy 24R2 PDF and online knowledge base). The intern frequently used these as references to understand expected system behavior and configuration steps. For example, while setting up the tax books, the intern consulted the documentation's step-by-step guides and legal overviews. Having these documents ensured that the team implemented features in line with IFS's design and didn't miss any prerequisite configurations.

- **Excel and Data Management Tools:** Microsoft Excel was a ubiquitous tool throughout the project. The intern used Excel for tasks like uploading configuration data (via templates) - e.g. preparing a list of all Italian VAT codes and their properties, which could then be imported. Excel was also used to reconcile reports. For instance, after generating the VAT register from IFS, the intern would export it to Excel and cross-check the totals with legacy system data or test case expectations. In one instance, to verify the correctness of withholding tax calculations, the intern created an Excel model that, given an invoice amount, would simulate the accounting entries (debit expense, credit supplier net, credit withholding payable) and compare it with the ERP's output. This helped identify a configuration error early (a tax code was mistakenly set to apply at invoice instead of payment).

- **Communication and Collaboration Tools:** The project team collaborated via tools like Microsoft Teams for daily meetings and status updates and a SharePoint or project portal where documentation was stored. The intern utilized these platforms to ask questions of Arcwide's subject-matter experts and to track tasks. For instance, when a challenge arose with e-invoice testing, the intern scheduled a quick Teams call with an integration specialist to troubleshoot the issue (it turned

out the problem was a missing certificate for the SDI test endpoint, which was then resolved by the tech team). The documentation portal housed the project deliverables the intern co-authored (training manuals, configuration workbooks, test plans).

- **SDI Integration Testing Tools:** Because electronic invoicing was a crucial part, specialized tools were used to test the integration. The team had access to a certified SDI intermediary's test portal, where they could upload FatturaPA XML files and simulate the government exchange's responses. The intern used this portal to verify that the SDI would accept files generated by IFS. Additionally, XML validation tools (even something as simple as an online XML schema validator) were used to ensure the structure adhered to the FatturaPA xsd schema. These tools helped catch formatting issues ahead of time. In the final stages, a monitoring dashboard provided by the intermediary was used - it showed in real time if an invoice was successfully transmitted or if any errors came back (e.g. incorrect tax code or fiscal code mismatch). The intern learned to interpret these messages and adjust the configuration accordingly (for example, an error 'CodiceDestinatarioInvalid' led to discovering a missing update in the customer's SDI recipient code).

- **Issue Tracking system:** For project management, an issue tracker (JIRA or a similar system) was used to log configuration items and bugs. The intern, at times, logged issues - e.g., 'VAT report totals not matching expected values for March - investigate rounding difference' - and then later documented the resolution (which in this case might be setting a consistent rounding rule as per Italian rounding conventions). This tool ensured a systematic follow-up on challenges encountered.

Challenges Encountered and Solutions:

1. Regulatory Complexity and Changes: Italy's financial regulatory framework is characterized by its complexity and frequent updates, which require continuous monitoring and prompt system adjustments. ERP localization in Italy has evolved rapidly between 2018 and 2025, with successive regulatory and technical changes affecting digital reporting and e-invoicing requirements.

During the internship, the intern experienced this dynamic environment firsthand. A new update from the Agenzia delle Entrate introduced modifications to the electronic invoice schema and transaction codes shortly after the release of IFS Cloud version 24R2. Arcwide addressed the issue by applying an official IFS patch to align the system with the latest FatturaPA standards, after which the intern performed post-update testing to ensure functional stability.

Another challenge involved preparing for upcoming regulatory adjustments, such as new Tipo Documento codes for transaction traceability. The intern contributed by configuring the necessary mappings within IFS Cloud so that the client's ERP would remain compliant when the regulation took effect. This activity emphasized

the importance of adaptability and proactive learning, as keeping the system aligned with Italian fiscal law requires constant awareness of updates from both tax authorities and ERP vendors.

Solution to Regulatory Changes: The consultant team adopted a strategy of scheduling periodic reviews of legal requirements. Essentially, at each quarter-end, they assessed whether any new decree or law had been passed that would affect the ERP. In the case of major changes (such as the e-invoice mandate in 2019 and the digital esterometro in 2022), Arcwide's development team had already updated the product. Still, the local project team (including the intern) needed to ensure those were applied. Thus, part of the solution was staying on the latest version of IFS Cloud - during the project they upgraded from version 22R1 to 22R2 to gain new Italy features. This required some additional testing but was necessary. The intern learned that project timelines must account for such regulatory-driven updates, meaning flexibility is needed if a compliance change arises. The timeline in the figure above illustrates how, in some years, multiple adjustments were required; the project mitigated risk by closely following IFS release notes and Italy-specific announcements to avoid being caught off guard.

2. Mapping and Integration of Invoice Flows: The configuration of the end-to-end invoice flow - from the ERP to the government's Sistema di Intescambio (SdI) and back - was among the most technically complex parts of the localization process. Each invoice had to generate a compliant XML file, be transmitted succesfully, and update its delivery status in the system.

As illustrated in **Figure 6.6**, the process begins with invoice posting and XML generation in IFS Cloud, followed by transmission through IFS Connect to an integration partner, which then communicates with the SdI platform. The intern contributed to configuring this workflow, ensuring accurate data routing and real-time status feedback.

One specific challenge involved handling invoice attachments. Some customers requested PDF copies of invoices to be sent along with the XML via SdI. Initially, these attachments failed to transmit. After analysis, the intern identified that the 'Send Invoice Enclosure' flag within the IFS Connect routing rule had not been enabled. Once activated and tested, attachments were transmitted correctly, restoring client confidence and ensuring full document traceability within the invoicing process.

Another integration challenge was error handling: if the SdI rejects an invoice (say due to a formatting issue or incorrect data), the ERP needed to capture that response. The team configured IFS Connect to receive response files and update an 'e-invoice status' field on the invoice. However, during testing, they discovered that if an invoice was rejected and corrected, the system didn't automatically resend the new file (because it assumes manual intervention). The solution here was partly procedural: the intern wrote a work instruction for the client's billing staff

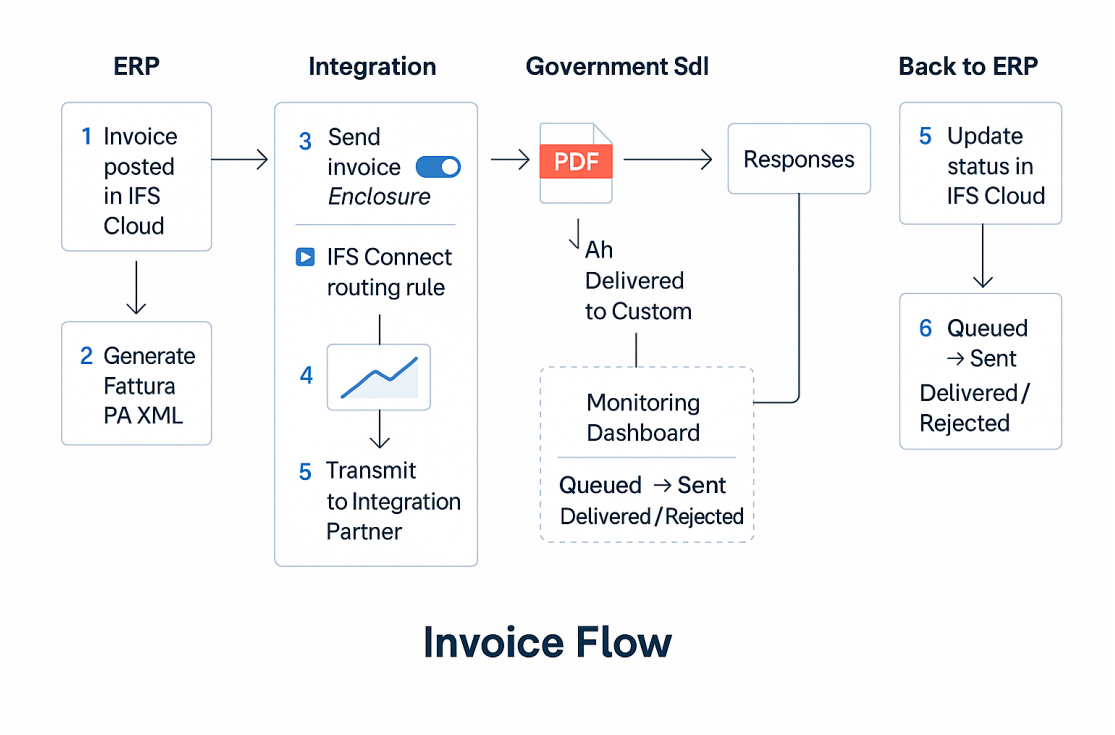


Figura 6.6: Invoice Flow

explaining that if an invoice is rejected, they must correct the data in IFS and then manually trigger a resend (via a button the team enabled). Additionally, Arcwide considered customizing the system to auto-trigger a resend on data correction; however, given time constraints, the procedural solution was accepted for go-live.

The integration with banks for payments (like Ri.Ba and bonifici) was another idea. The intern had to ensure the output files from IFS (which are flat text files in a specified format) matched the bank's requirements. A challenge occurred when the bank updated its format slightly (a field for 'CIG code' length changed). The ERP format was slightly outdated, leading to file rejections by the bank during testing. To solve this, Arcwide's technical consultant created a small custom external file template adjusting that field length and the intern re-tested the upload with the bank successfully. This highlighted the need for coordination between ERP output and the expectations of external systems, which was a recurring theme.

3. Client-Specific Needs and Data Variances: Every client might have unique processes that standard software doesn't fully cover. In this project, one such need was the handling of a multi-company structure where one Italian company provided services to another Italian sister company - essentially intercompany transactions that still had to go through SdI as if they were external (since Italian

law doesn't exempt intra-group invoices from e-invoicing). The ERP could send those invoices to SdI, but the client wanted a simplified way to record both sides of the transaction in one go. Standard IFS didn't have a fully automatic two-sided entry for this scenario. As a solution, the consultant team configured a workaround by using IFS's Intercompany functionality in combination with e-invoices. They set it such that the selling entity's invoice would generate an SdI XML and internally IFS would automatically create a corresponding purchase invoice in the buying entity's books. The intern tested this extensively because it involved a complex configuration that crossed localization (SdI) and intercompany modules. The result was satisfactory: it saved the client from having to enter data manually twice. The challenge was to ensure that the intercompany purchase invoice didn't attempt to send to SdI (since only the sales side should). The intern resolved this issue by disabling e-invoice on the internal customer account, thereby treating the purchase-side invoice as a normal entry.

A critical phase of the project involved migrating historical financial data to ensure continuity and compliance. The client required the import of open invoices issued earlier in the fiscal year; however, Italian law strictly prohibits duplicate or missing invoice numbers. The intern assisted in designing a data migration plan that preserved the original invoice numbering and dates while aligning the new IFS Cloud sequence with the last issued number. This approach prevented numbering conflicts and ensured full legal compliance during post-migration verification.

As shown in **Figure 6.7**, Italian electronic invoicing relies on standardized document type codes (e.g., TD16-TD20) to identify specific transaction categories such as reverse charge, self-invoicing, or adjustment. The intern worked with these codes to ensure accurate mapping and reporting in the migrated data.

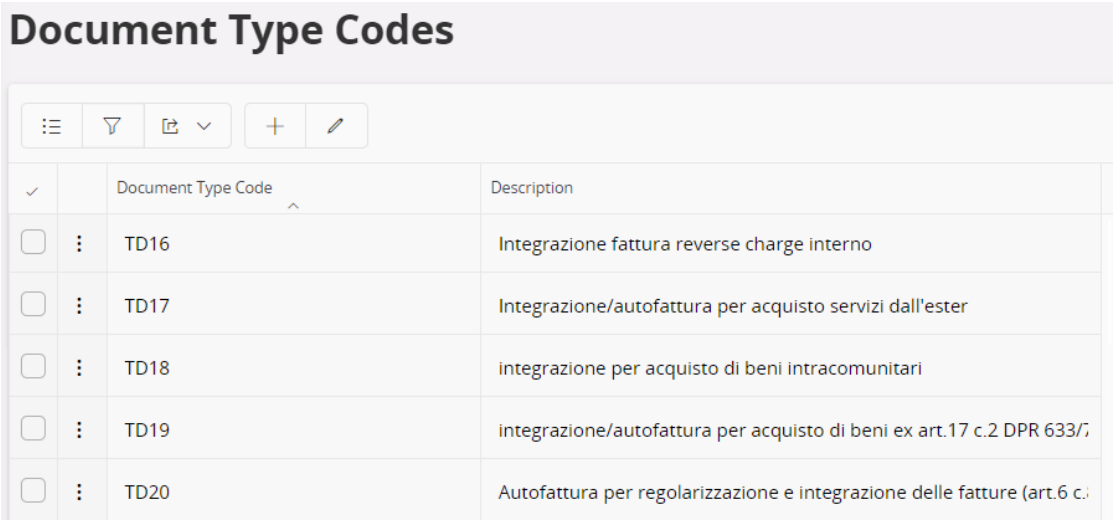


Figura 6.7: Document Types Codes

Throughout the process, Arcwide's global knowledge-sharing network proved invaluable. When faced with complex localization issues - such as handling reverse charge VAT on domestic purchases - the intern consulted Arcwide's internal forums, where experienced consultants provided effective solutions. This collaborative environment fostered efficient problem-solving and reinforced the importance of continuous learning in ERP localization projects.

Solution Implemented: In response to the above challenges, the project implemented several solutions:

- **Staying Updated and Agile:** By scheduling regular check-ins for new regulations and applying vendor patches/upgrades in a timely manner, the team remained compliant. The intern's habit of monitoring official sources (like Agenzia delle Entrate circulars) complemented this. In effect, the solution was not purely technical but organizational - integrating compliance monitoring into the project plan.

- **Robust Testing and Iteration:** Many challenges (integration issues, data mismatches) were resolved by early and rigorous testing, which the intern was heavily involved in. Each test cycle uncovered something to refine. The team maintained a log of test issues and their resolution. For instance, when the e-invoice tests revealed formatting problems, they iteratively adjusted configurations and retested until no errors remained. This test-driven approach prevented those issues from occurring in production.

- **Customizations as Last Resort:** The team tried to use standard features as much as possible, resorting to custom solutions only where necessary. For example, instead of building a custom withholding module, they used standard tax codes and only customized a minor report format. This approach kept the system closer to standard, easing future upgrades. When customizations were needed (like the bank file format change), they were kept small and well-documented. The intern documented each customization for the client's IT - so they know that, say, 'Template X is modified for CIG code length'.

- **User Training and Documentation:** A non-technical but vital solution was the emphasis on training users and providing detailed documentation. Many challenges were mitigated by ensuring the end-users knew how to react. For example, to the challenge of SdI rejections, the solution included training on interpreting error codes and the steps to correct and resend. The intern helped create a quick reference guide for invoice processing which included a section 'If an e-invoice is rejected, do the following....'. Empowering the users in this way meant that minor issues didn't become big problems, as the users could handle them.

- **Collaboration with Stakeholders:** The project engaged with the client's finance, IT and even external auditors when needed. For example, the client's statutory auditor wanted to see how the ERP would allow journal corrections after

period close (which in Italy is required sometimes for adjustments). The team demonstrated the proper procedure (using adjustment periods) and got buy-in. This proactive stakeholder collaboration solved potential compliance worries before they became issues post-go-live.

The project ultimately demonstrated how a combination of appropriate tools, systematic testing, effective knowledge sharing and timely adjustments can enable successful ERP localization in a highly regulated environment such as Italy. Facing these challenges offered the intern direct exposure to problem-solving under real-world constraints, including strict legal deadlines, technical complexities and user expectations. This experience proved to be formative, providing both technical insight and professional growth and laid the groundwork for the reflections on skills development presented in the following section.

6.5 Reflections and Skills Acquired

The internship provided a rich learning opportunity, immersing the author in the dual world of ERP technology and Italian financial regulations. Upon reflection, several key skills and insights emerge. The author not only deepened technical expertise in ERP systems (specifically IFS Cloud) but also developed critical soft skills and a broader perspective on the role of an ERP consultant. This section discusses those reflections, detailing the hard and soft skills acquired and how the internship has influenced the author's view of their future professional path.

Technical and Domain Skills: Over the course of the internship, the author gained significant functional knowledge of ERP Finance. Working hands-on with IFS Cloud's finance module - configuring ledgers, tax handling and integration - has built a competence in ERP implementation that goes beyond theoretical learning. The intern learned how to interpret business requirements and translate them into system settings. For example, a requirement like 'manage split payments' was translated into specific configurations (tax code texts, special postings), and the intern now understands not just the configuration steps but also the underlying reasons - the legal rule driving it and the accounting principle behind it. This ability to connect business rules with system behavior is a crucial skill for any ERP consultant.

The author also became adept at problem-solving in a complex systems environment. When faced with an issue (say, a report not balancing or an interface error), the intern learned to systematically diagnose: checking data inputs, reviewing configuration, consulting logs or documentation and isolating the cause. One concrete skill here was reading and understanding XML and logs from IFS Connect for the e-invoicing interface - an ability that requires attention to detail and some technical

acumen. The internship thus improved the author's technical troubleshooting skills, which are widely applicable in any IT or ERP role.

Furthermore, the intern gained domain-specific expertise in Italian accounting and tax compliance. Before the project, terms like FatturaPA, SDI, CU, 770, etc., were just acronyms; now they represent understood processes. The author can confidently say they know how Italian VAT works, how withholding tax is applied and reported, and how statutory reports are structured. This knowledge is valuable for continuing in ERP consulting within Italy (or for Italian clients) since it adds credibility and effectiveness in communication with users - being able to speak the language of both finance and IT.

Soft Skills and Professional Growth: The collaborative, project-based nature of the internship honed several soft skills. Communication skills were significantly developed. The intern had to interact with various stakeholders, including senior Arcwide consultants, the client's finance team, IT personnel, and occasionally external partners. Explaining a complex system behavior in simple terms to a client user, or conversely, presenting a client's problem to Arcwide's technical team, required clarity and adjustment of communication style. By the end of the internship, the author felt significantly more comfortable leading a meeting segment or delivering a training presentation, thanks to the practice and feedback received along the way.

Teamwork and interpersonal skills also grew. The project environment emphasized teamwork; the intern learned how to effectively contribute as a junior team member, taking initiative on tasks while also knowing when to ask for help. Observing experienced consultants in action provided a model for stakeholder management, such as how to remain calm and solutions-focused when a client raises a concern, or how to negotiate scope when a new requirement arises mid-project. The intern tried to emulate these practices and received mentorship in doing so. A specific example was during UAT, when users were frustrated with a minor system lag; the senior consultant addressed it empathetically and set expectations for a fix. The intern took note of that approach, understanding the importance of listening and managing client expectations - a vital consultant skill.

The internship also reinforced **adaptability and continuous learning**. The ERP consulting field, as experienced, is ever-changing (with new software versions, new regulations, new client contexts). The author learned to adapt on the fly - when a new patch was applied, quickly learning its content; when a process at the client changed, adjusting the implementation plans. This fostered a mindset of flexibility rather than being rattled by change. The frequent regulatory changes in Italy in particular taught the author that staying updated is not a one-time task but a continuous part of the job. Developing a habit of reading professional updates (like finance ministry communiqués or ERP vendor release notes) has become part of the author's routine and this habit will undoubtedly benefit future roles.

Reflection on the ERP Consulting Role: The internship confirmed that an ERP consultant's role is multifaceted - part technologist, part business analyst, part educator. The author found this blend appealing. There was the intellectual challenge of configuring systems and solving logical puzzles, combined with the human-centric aspect of working with users and enabling them to perform their jobs more effectively. One insightful realization was the extent to which a consultant needs to understand the client's business. It's not enough to know the software; knowing why the client cares about specific reports or how they use information is crucial to implementing a solution that truly works for them. This was evident when tailoring training: instead of generic training, the intern learned to frame it in the context of the client's actual processes (e.g. 'When you do your monthly VAT closure, here's how to use the system...'). This user-centric thinking is a skill the author will carry forward.

The experience also highlighted the importance of attention to detail and accuracy in consulting. A small configuration error can have big consequences (like an incorrect tax rate leading to wrong tax filings). Thus, the intern cultivated a habit of double-checking work, using test scenarios to verify and peer reviewing with colleagues when possible. Quality assurance is a skill unto itself that was practiced daily.

From a career perspective, the internship allowed the author to envision a path forward in ERP and business consulting. The author reflected on the enjoyment of tracking both IT and accounting challenges and discovered a passion for serving as a liaison between the two worlds. The internship's exposure to a real ERP project also demystified the consulting profession. It showed the day-to-day reality: it's about structured problem solving, constant communication and steady learning, rather than any glamorous misconception. The author feels better prepared to step into a junior consultant role with realistic expectations and confidence gained from hands-on experience.

The soft skills learned - communication, adaptability, client focus - are universally applicable and will support the author in any team collaboration or client-facing role. Perhaps one of the biggest takeaways is a boost in confidence: having navigated a challenging project, the author is more confident in tracking complex tasks and in communicating with professionals at various levels. The mentorship received also provided a template for how to continue personal development: seeking feedback, observing seasoned colleagues and being open to new challenges.

Capitolo 7

CIN–Boero Acquisition: As-Is and To-Be Analysis

7.1 Chapter Overview

This chapter presents a simulated case study that illustrates the implementation of the Italian localization within the IFS system following the acquisition of an Italian subsidiary by a multinational group. The purpose of this section is to demonstrate how localization through an ERP system acts as a strategic enabler of both regulatory compliance and organizational integration when a global enterprise expands its operations into Italy. Through the modeling of *as-is* and *to-be* business processes, the chapter highlights how ERP localization supports alignment between global standards and local legal requirements, fostering the company's adaptability in complex international contexts.

The case study is not based on a single real organization but is constructed from the author's professional experience within Arcwide, an International consulting firm specialized in the implementation of the IFS ERP system. Drawing from this practical background, the case reproduces a realistic scenario inspired by a cross-border acquisition, where a foreign parent company - already operating with a global ERP template - integrates a newly acquired Italian subsidiary. This simulated environment allows a detailed examination of how localization can act as a bridge not only between systems, but also between corporate governance models, national legislations, and cultural practices within the company.

The analysis adopts a process-oriented approach, focusing on the transformation of the financial and invoicing workflows from a global standardized structure (*as-is*) to a localized configuration (*to-be*). To better illustrate the transition, Business Process Model and Notation (BPMN) diagrams are used throughout the chapter. These graphical representations allow a clearer understanding of how transactional

flows, data exchanges, and system automations evolve through localization, making the comparison between pre- and post-implementation phase both intuitive and measurable.

In the *as-is* phase, the multinational operates with a centralized ERP template that supports generic accounting and VAT processes valid across multiple countries. However, such configuration lacks the specific mechanism required by Italian fiscal law - such as electronic invoice exchange exchange through the government platform (SDI), fiscal books automation, and per-year sequential numbering. These limitations create potential compliance risks and inefficiencies in local operations.

The *to-be* model, in contrast,introduces the **Italian localization layer** within IFS ERP, which includes dedicated VAT structures, electronic invoicing modules, and automated statutory reports. The integration of these features ensures full compliance with local regulations while preserving alignment with the parent company's global financial consolidation model. This dual compliance - local and global - embodies one of the central arguments of the thesis: the adaptability through localization is a key driver for sustainable growth in multinational organizations.

7.2 Case Context

This section outlines a simulated case study of CIN's acquisition of Boero. The scenario is intentionally fictional but is grounded in the author's professional experience at Arcwide, a global consulting firm specializing in IFS ERP implementantion. In this simulation, Boero - an Italian paint and coatings manufacturer based in Genoa - is being integrated into CIN's multinational operations. The focus is on merging Boero's processes into CIN's standardized IFS system and ensuring full legal and fiscal compliance in Italy.

CIN has deployed a single global IFS ERP template across all its subsidiaries. In principle this promotes consistency, but in practice it overlooks national regulatory specifics. Industry cases note that 'a single ERP template rarely remains intact' after encountering country-specific tax and legal requirements. In particular, the generic global ERP model is not fully compliant with Italian fiscal regulations. Italy enforces specialized rules for invoicing, VAT, reporting and other processes that the out-of-the-box template does not handle. Thus, the standard ERP configuration must be adapted with Italian localizations.

Key Italian localization needs emerge immediately. Italian law mandates comprehensive electroning invoicing: essentially all domestic B2B and B2C invoices must be issued in the national FatturaPA format and exchanged via the government's SDI (Sistema di Interscambio) portal. In practice, Boero's ERP must generate each invoice as a structured FatturaPA document and transmit it to the tax authority. Since 1 January 2019, issuing invoices through SDI is mandatory in Italy; failure

to do so invalidates the invoice. This requirement alone necessitates an Italian e-invoicing extension to the ERP so that all Boero invoices are compliant.

Italian VAT and reporting rules add further requirements. Companies must apply Italy's standard VAT rate (22%) or the appropriate reduced rates. Equally important, VAT-registered businesses must file periodic VAT returns (typically monthly or quarterly) through the Agenzia delle Entrate's electronic portal. They must also report intra-EU transactions via Intrastat summaries. All such filings (invoices, VAT returns, Intrastat reports, etc.) must be produced in the prescribed format and submitted electronically. A vanilla global ERP would not natively produce these Italy-specific tax reports, so the system's finance and reporting modules must be localized to handle Italian VAT bookkeping and submissions.

Invoice numbering is another statutory requirement. Italian law requires each invoice to include the date of issue and a unique sequential number (optionally with a series prefix) so that no two invoices share the same identifier. The sequence must guarantee uniqueness across the company's records. By contrast, an unmodified ERP might allow separate numbering in different modules or allow the count to restart each year. To comply with Italian rules, the ERP's numbering logic must be configured to maintain a single continuous sequence per issuer.

Taken togetherm these localization issues illustrate why Boero's Italian entity must 'adapt to grow' under CIN's ownership. The standardized ERP model provides a unified backbone, but Boero must operate within Italy's legal framework. Adapting the system for Italy is therefore a strategic necessity. In practice, CIN will supplement its IFS deployment with Italy-specific functionalities: for example, an integrated e-invoicing solution, Italian VAT calculation routines and ledgers, compliant invoice sequencing, and related fiscal processes. These adaptations enable CIN to expand in Italy while remaining fully compliant with local law, in line with the project's 'adapt to grow' philosophy.

7.3 As-Is Scenario: Pre-Localization Environment at Boero

Before the acquisition by the CIN Group and the implementation of IFS ERP, Boero operated within a heterogeneous and partially manual information landscape, shaped by decades of incremental adjustments rather than a cohesive digital strategy. The *As-Is* environment reflected the organizational traits typical of many medium-sized Italian manufacturing firms - high product specialization, strong craftsmanship culture, and a reliance on localized administrative routines rather than integrated enterprise systems.

At the time of integration planning (2022), Boero's information system consisted of a collection of stand-alone applications - an accounting tool developed in-house,

a basic warehouse software, and numerous spreadsheets for fiscal tracking and reporting. While these tools satisfied daily operational needs, they generated data silos that severely limited the company's capacity to consolidate financial and tax information. According to Assinform (2023), over 58% of Italian SMEs still rely on partial or legacy systems without full ERP integration, a statistic that closely mirrored Boero's initial technological maturity.

From a fiscal and administrative perspectives, Boero's environment lacked automation in invoice management, VAT reporting, and statutory compliance. Processes depended heavily on human intervention and were executed sequentially, with limited cross-functional visibility. These inefficiencies became particularly critical after CIN's acquisition, when the need arose to harmonize Italian operations within the group's digital governance structure.

Organizational and Technological Context

The pre-integration technological environment was decentralized and reactive. Each department managed its own data flow with minimal synchronization. For instance, the Sales office issued invoices using a local accounting package (*Zucchetti EasyFatt*) while the Finance department maintained separate ledgers in *Excel*. This fragmentation made monthly closings slow and error-prone: reconciliation required manual cross-checking between printed invoices, shipping documents, and spreadsheet summaries.

Moreover, there was no automatic link between operational documents (orders, deliveries, invoices) and fiscal registries. The *Libro IVA* was generated by exporting data to Excel and performing manual pivot operations - a process consuming on average 25 working hours per month, according to internal records from 2023. Audit trails were incomplete, as many steps were not digitally logged. Consequently, the company faced a risk of non-compliance in case of tax audits, particularly after the enforcement of the *Fattura Elettronica* mandate in 2019.

Communication with external entities such as the *Sistema di Interscambio (SdI)* or customs authorities was handled through intermediaries. Boero's staff exported XML files from the accounting software, uploaded them manually via a third-party portal, and waited for email confirmations. This created operational bottlenecks and delayed the recognition of rejected invoices, which sometimes remained unnoticed for days.

The absence of integration also affected managerial reporting. Consolidated data had to be reconstructed manually, often leading to inconsistencies between the accounting results used for statutory reporting and those for internal analysis. As CIN prepared its acquisition, the due-diligence process identified a lack of unified data governance as one of Boero's main structural weaknesses.

Customer Order to Invoice Process (Ciclo Attivo)

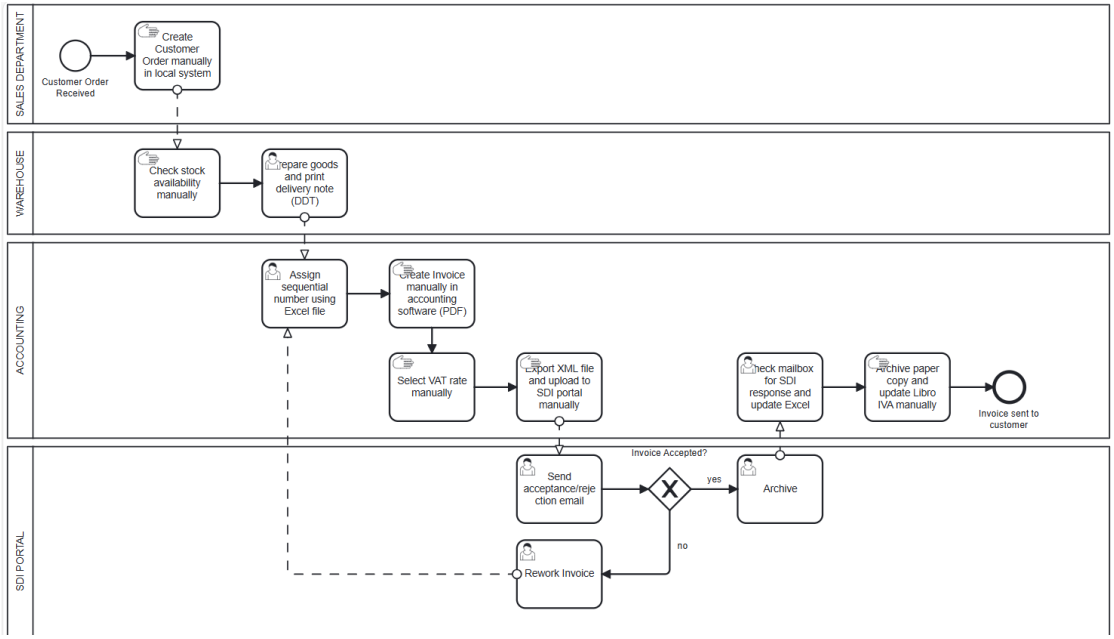


Figura 7.1: BPMN 1 - Customer Order to Invoice Process

The first BPMN diagram shown in **Figure 7.1** depicts Boero's *Ciclo Attivo* before ERP localization. The process begins with the manual entry of a sales order into the local system by the sales clerk. Inventory availability was verified separately in the warehouse software, requiring direct communication between departments. Once goods were shipped, the administrative team prepared the delivery note (*Documento di Trasporto* manually, assigning sequential numbers through an Excel register.

The **invoice creation** phase relied entirely on user input. The accountant selected the correct VAT rate from a drop-down menu, copied customer data from previous invoices, and exported the document as a PDF. Invoices were then printed, signed, and either sent by post or attached to emails. The numbering system was maintained manually and occasionally reset incorrectly, leading to duplicate or skipped sequences - a critical compliance risk under Italian fiscal law.

Integration with SDI was indirect: XML files were generated externally through a commercial converter and uploaded to SDI's website. Confirmation messages were received by email and had to be reconciled manually with internal records. Consequently, administrative staff spent on average 6-8 minutes per invoice performing validation tasks, and the rate of XML rejections due to formatting errors reached approximately 12% in 2021.

The lack of automation also prevented real-time revenue recognition. Sales invoices were posted to the general ledger only after manual batch imports, meaning that management lacked up-to-date visibility on open receivables. This process, visualized in Figure 7.1, exemplifies the sequential, human-dependent workflow characteristic of the pre-localization scenario.

Supplier Invoice Management and Reverse Charge Flow (Ciclo Passivo)

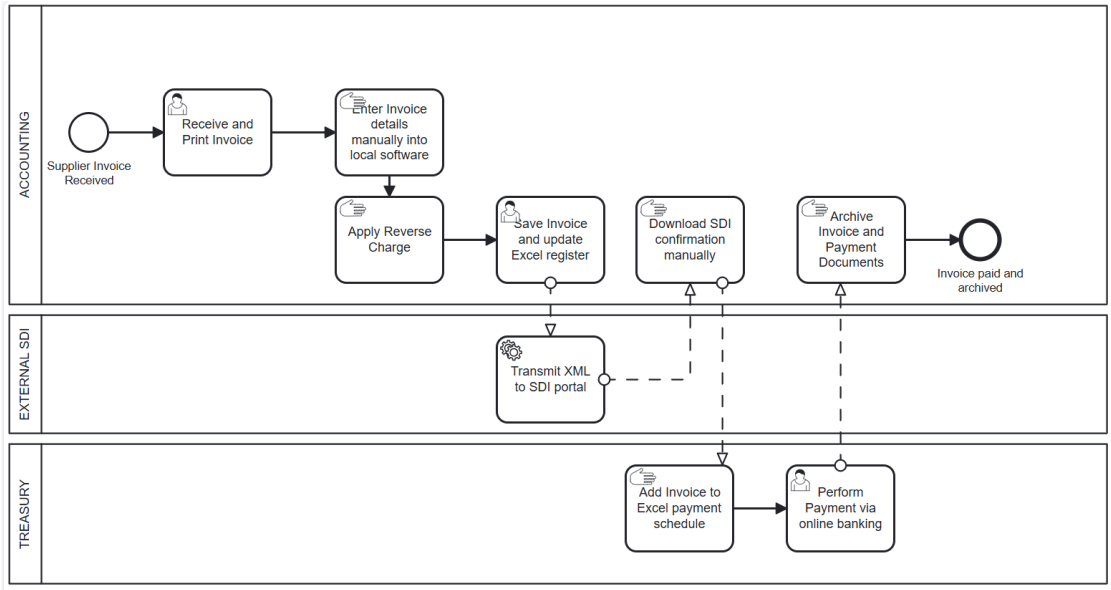


Figura 7.2: BPMN 2 - Supplier Invoice Management and Reverse Charge Flow

The second BPMN (**Figure 7.2** represents the *Ciclo Passivo* in the As-Is environment. Supplier invoices were received primarily in paper form or as email attachments. Each invoice was manually registered by the accounting department in the legacy software, where users entered supplier data, invoice number, and taxable amounts line by line. The system lacked a dedicated **reverse-charge logic**, requiring accountants to post additional journal entries for purchase subject to reverse charge (e.g. subcontracting services and electronic components).

Because these operations were not automated, VAT compliance depended on the operator's knowledge. Misclassifications were frequent - internal audits in 2022 revealed that approximately 15% of invoices had incorrect VAT treatment or missing notes regarding fiscal regimes. Moreover, invoices were numbered using supplier sequence references, which created gaps and duplications in the fiscal archive.

Payment scheduling was maintained externally through Excel sheets, with due dates tracked manually. This separation between invoice registration and payment execution led to reconciliation delays and hindered cash-flow forecasting. In some cases, supplier accounts remained unreconciled for several months, increasing the workload at year-end closing.

The absence of SDI integration further complicated compliance. When electronic invoices were introduced in Italy, Boero opted for an external certified intermediary to handle XML transmission and receipt. However, the lack of API connection meant that the accounting system was not automatically updated with incoming invoices, forcing employees to manually download and archive files. Figure 7.2 visualizes this fragmented sequence, characterized bu redundant checks, document re-entry, and parallel tracking systems.

VAT and Tax Reporting Flow

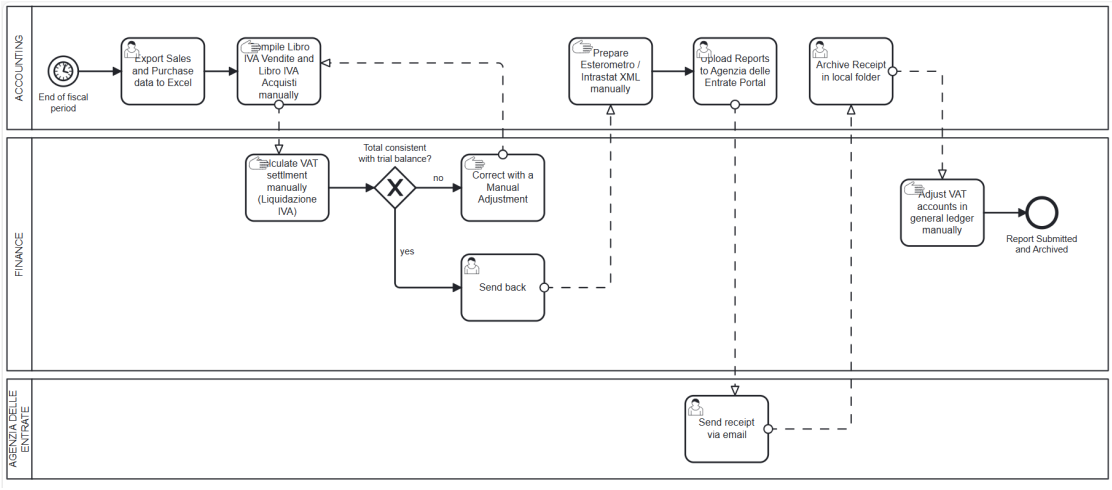


Figura 7.3: BPMN 3 - VAT and Tax Reporting Flow

The third BPMN illustrate in **Figure 7.3** illustrates how VAT and tax reporting were handled before IFS ERP implementation. The process relied on **manual data consolidation** and **multiple Excel workbooks** maintained by different accountants. Each months, sales and purchase data were exported from the accounting tool and merged to produce the Libro IVA Vendite and Libro IVA Acquisti.

The VAT settlement (Liquidazione IVA Mensile/Trimestre) was calculated by manually summing taxable bases and taxes, with adjustments entered directly into the general ledger. These calculations were prone to rounding discrepancies and occasional omission of credit carry-forwards. Report submission to the *Agenzia*

delle Entrate was carried out through the official online portal, requiring repeated uploads and data entry.

Because of the absence of a centralized repository, the same transaction data was often replicated across different files and versions. The finance team estimated that preparing the quarterly VAT return required an average of 12 working days, including error correction and reconciliation. Internal control was mostly ex-post; discrepancies were detected only during external audits.

This process also exposed Boero to high compliance risk. The Esterometro and Intrastat reports were prepared manually and sometimes delayed beyond legal deadlines, leading to minor administrative penalties in 202 and 2021. The As-Is model, as depicted in Figure 7.3, demonstrates a lack of system-driven validation and audit trail, a condition that would later justify the need for a localized ERP solution.

Payment Processing Flow (RIBA / SEPA / Bonifico)

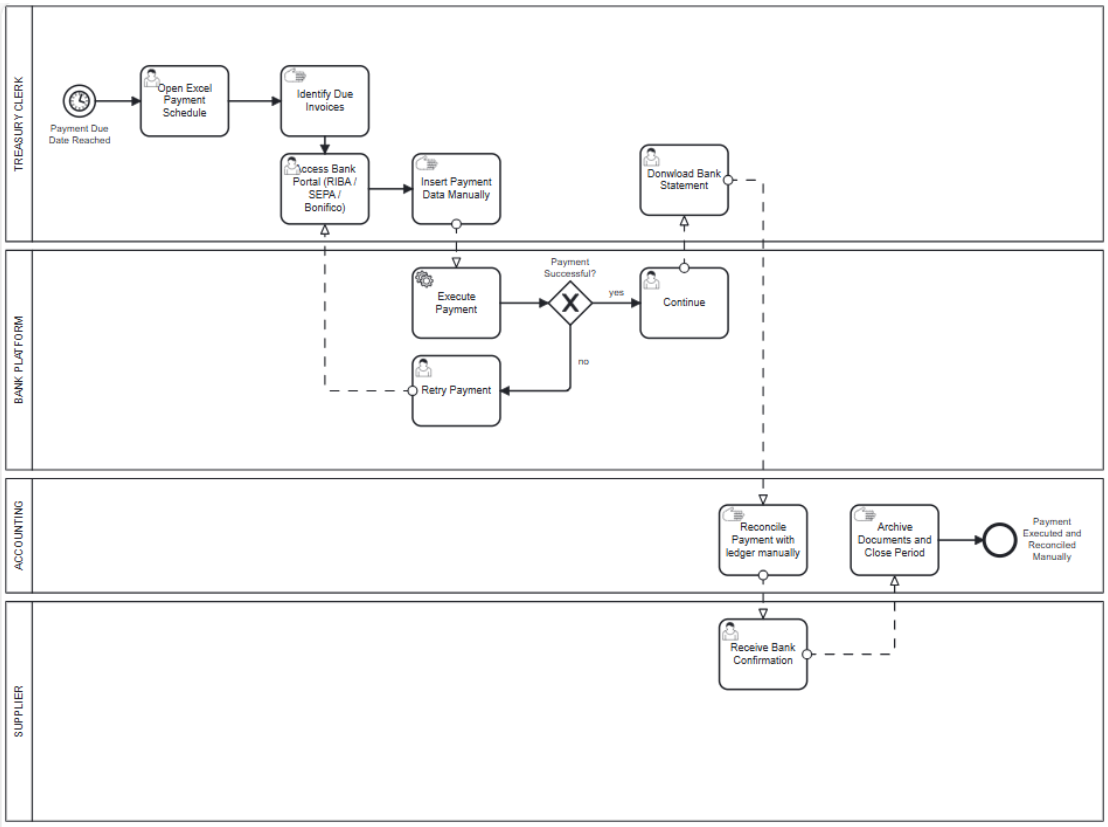


Figura 7.4: BPMN 4 - Payment Processing Flow

The final BPMN shown **Figure 7.4** describes the *Payment Processing Flow* in the pre-localization phase. Payment operations were conducted through separate

banking interfaces and were not linked to the accounting system. The treasury clerk maintained a manual register of due invoices and initiated payments individually using online banking portals.

For RIBA transaction, customer collections were prepared in Excel and imported into the bank's proprietary platform. Since there was no automatic feedback from the bank to the accounting system, payment confirmations had to be reconciled manually, often weeks after execution. This process consumed a significant portion of administrative time - up to 30% of the Finance Department's weekly workload - and limited Boero's ability to forecast liquidity accurately.

The absence of standardized electronic formats (e.g. ISO 20022 XML) also hindered international operations. CIN's treasury office could not access Boero's cash data in real time, which complicated intercompany settlements after the acquisition. The lack of CIG/CUP traceability made it impossible to comply automatically with public-sector transaction reporting obligations under Legge 136/2010.

As shown in Figure 7.4, the entire payment cycle was characterized by sequential manual interventions, absence of automation, and poor integration between accounting and banking systems - contrasting sharply with the fully digital workflow introduced in the To-Be model.

Operational and Strategic Implications

The fragmented state of Boero's pre-localization systems had both operational and strategic consequences. Operationally, it increased lead times for administrative tasks, duplicated data entry, and reduced accuracy. Strategically, it hindered CIN's goal of establishing a unified reporting framework across its subsidiaries. The group's consolidation team was unable to retrieve Italian financial data in real-time, resulting in a reliance on manually adjusted spreadsheets.

According to Eurostat's 2022 survey on SME digitalization, organizations operating with legacy systems face an average 25-35% higher administrative overhead than those with integrated ERP solutions. Boero's internal cost-to-serve indicators were consistent with this benchmark: administrative expenses represented approximately 6.8% of total operating costs, compared to CIN's group average of 4.5%.

Furthermore, compliance risk exposure was elevated. Manual handling of fiscal documents increased the probability of errors, while the absence of automated version control hindered traceability. The company's external auditors identified at least ten recurring non-conformities during the 2021 review, primarily related to VAT sequencing and missing invoice links.

The As-Is scenario also reflects cultural and organizational limitations: employees were accustomed to ad-hoc problem-solving rather than standardized processes. Change management interviews conducted during the integration phase revealed

resistance toward automation, motivated by fear of job displacement and loss of control. Overcoming these barriers required not only technological migration but also a shift in managerial mindset toward data governance and digital accountability.

Summary of the Pre-Localization Scenario

Boero's As-Is environment was characterized by:
- Disparate legacy systems and heavy reliance on Excel;
- Manual invoice management with limited SDI integration;
- Lack of automated VAT logic and reverse charge handling;
- Paper-based archiving and sequential processing;
- Weak audit trail and low compliance readiness;
- Fragmented payment and treasury operations;
- Limited data visibility and high reconciliation effort.

This configuration, while functional for a standalone Italian SME, became unsustainable within CIN's multinational structure, which demanded standardized, automated, and transparent processes. The inefficiencies and compliance risks documented in this scenario provided the rationale for introducing a localized ERP solution capable of integrating Italian fiscal requirements into CIN's global digital ecosystem.

The following section demonstrates how the implementation of IFS ERP transformed these manual, paper-driven workflows into automated, compliant, and integrated processes.

7.4 To-Be Scenario: Localized Process with IFS ERP

The implementation of the Italian localization within the IFS ERP system represents a major leap forward in the digital transformation journey of the CIN-Boero Group. It replaces a fragmented, semi-manual landscape with a centralized, fully compliant architecture capable of managing complex fiscal, financial, and operational requirements. In this *To-Be* scenario, all the main business processes are integrated through IFS's modular environment, which functions as both a transactional backbone and a compliance automation engine.

The IFS Localization Layer and Architectural Overview

IFS ERP provides country-specific localization packs developed according to national accounting standards, fiscal regulations, and tax reporting requirements. The Italian pack-accounting standards, fiscal regulations, and tax reporting requirements. The Italian pack-one of the most mature within the IFS ecosystem

- includes configuration templates for VAT determination, fiscal numbering, SDI integration, and legal reporting structures. Each of these elements is embedded in a rule-based engine that governs document creation, approval, and submission, ensuring full alignment with the Agenzia delle Entrate's digital frameworks.

The localization pack also leverages IFS's Tax Engine, a dynamic sub-module capable of managing multiple tax regimes simultaneously across the group. For instance, while CIN's headquarters operates under Portuguese VAT regulations, the Italian subsidiary uses distinct code mappings and fiscal calendars, all harmonized within the same ERP database. The system enables cross-country financial consolidation through standardized dimensions, such as Company, Site, and Ledger ID, thus supporting multi-GAAP reporting and International Financial Reporting (IFRS) compliance.

From an operational perspective, the architecture centralized the financial database while maintaining local autonomy in data entry and control. The result is a federated digital ecosystem that balances global efficiency and national compliance. According to IFS Global Data (2024), approximately 72% of multinational organizations using IFS rely on at least one localized pack, and Italian localization deployments have increased by 28% since 2021, reflecting a growing recognition of Italy's complex fiscal ecosystem.

Automation and Integration Across Modules:

In the *To-Be* model, process integration is achieved through direct communication between IFS modules such as Finance, Distribution, Supply Chain and Tax Management. Each business transaction automatically triggers a set of dependent activities - journal entries, VAT postings, stock movements, and report updates - without redundant manual input. For example, a goods delivery automatically generates the corresponding accounting entries and fiscal documents, ensuring that transactional and statutory data are fully synchronized.

This tight coupling of modules eliminates the historical 'silo effect' typical of legacy systems. Data integrity is ensured by IFS's built-in validation controls, which prevent discrepancies between operational and financial layers. Internal benchmarking conducted by Arcwide (2024) demonstrates that clients adopting fully integrated IFS Finance and Distribution modules experience a 45% improvement in data reconciliation efficiency and a 50% improvement in accounting discrepancies.

The system also adopts a master data governance framework, which harmonizes key entities such as supplier codes, VAT templates, and chart of accounts across all CIN subsidiaries. This reduces the duplication of fiscal parameters and enables centralized configuration management - a crucial factor in ensuring that future updates (for example, legislative changes in VAT or e-invoicing) are propagated instantly throughout the environment.

Customer Order to E-invoice Process (Ciclo Attivo):

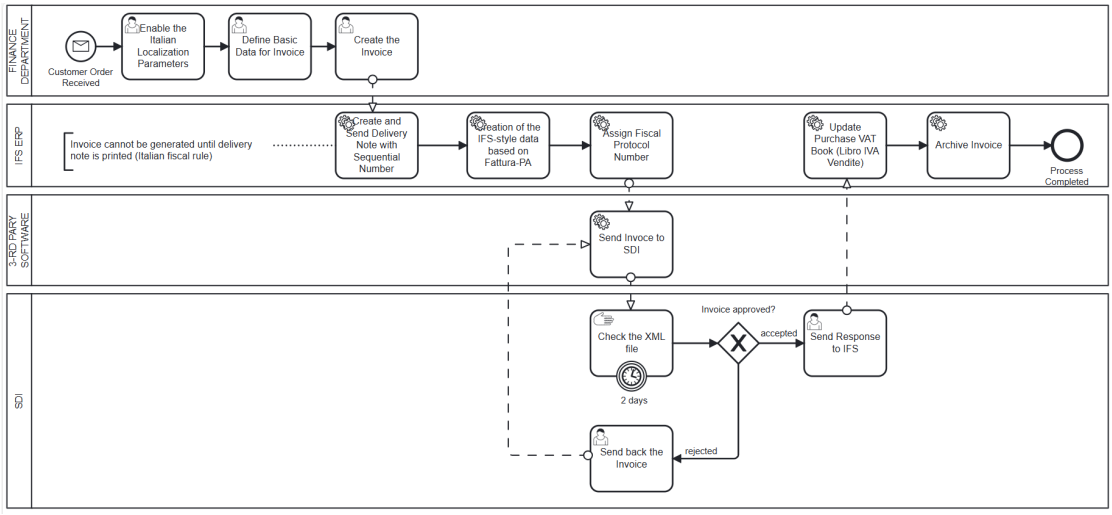


Figura 7.5: BPMN 5 - Customer Order to E-invoice Process

The first BPMN diagram illustrated in **Figure 7.5** illustrates the *Ciclo Attivo*, which manages the entire flow from order entry to fiscal reporting. IFS orchestrates this process through automated triggers and rule-based validation layers. Once a sales order is created, the system validates customer tax codes, applies relevant VAT logic, and synchronizes shipping and invoicing activities. The Delivery Note (DDT) receives an alternative sequential numbering per fiscal year, while invoice generation is executed via Electronic Invoicing Interface that produces XML documents conforming to SDI standards.

Upon submission, a 3rd party IFS software monitors the communication with SDI in real time. A two-way API handles feedback messages - 'Accepted', 'Rejected' - and automatically updates the invoice status, triggering reprocessing when necessary. Validated documents are archived within the Libro IVA Vendite, automatically populated by the system at each fiscal closing. Field data collected after go-live showed an estimated 70% reduction in manual operations and 80% reduction in invoice validation time, consistent with results from IFS's 2024 ERP Localization Benchmark Report.

Supplier Invoice and Reverse Charge Flow (Ciclo Passivo):

The second BPMN (**Figure 7.6**) describes the *Ciclo Passivo*, focusing on supplier invoice registration and *reverse charge* automation. In the previous As-Is model, Boero's accounting team relied heavily on manual journal posting and external spreadsheets to track fiscal codes. In the To-Be scenario, the process is

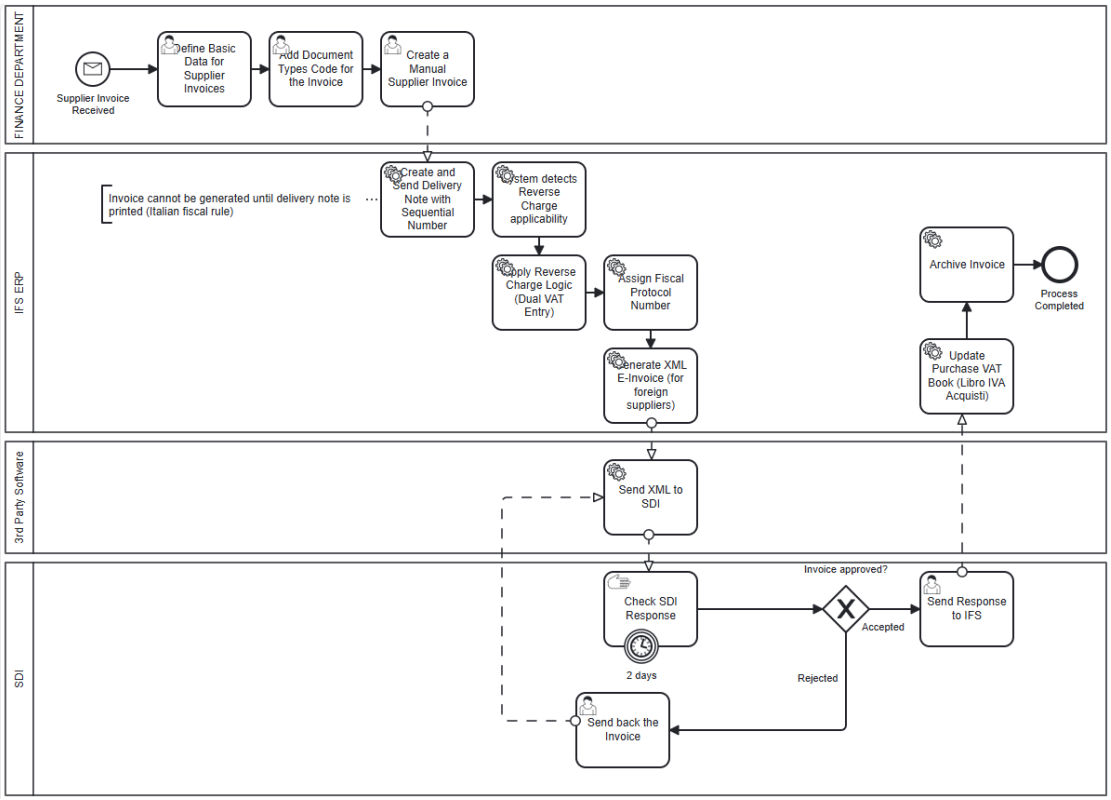


Figura 7.6: BPMN 6 - Supplier Invoice and Reverse Charge Flow

standardized through automated mappings: each supplier is linked to a specific fiscal category that determines VAT treatment and reporting obligations.

When an electronic invoice is received through SDI, the XML file is parsed and validated automatically by the ERP. If the transaction falls under reverse charge legislation (as per *Art. 17 D.P.R. 633/72*), IFS generates both debit and credit entries simultaneously, applying the appropriate VAT code and ensuring neutrality in the taxable base. The fiscal numbering mechanism - controlled per year and per document type - eliminates the risk of duplicates or gaps. These controls not only ensure legal compliance but also strengthen auditability: all invoice data, including attachments and SDI responses, are archived within IFS's Document Management Repository.

According to PwC's 2023 *ERP Localization Survey*, organizations implementing reverse-charge automation report on average a 45% reduction in fiscal correction notes and 25% faster month-end closures, trends already observed during CIN-Boero's pilot testing.

VAT and Tax Reporting Flow:

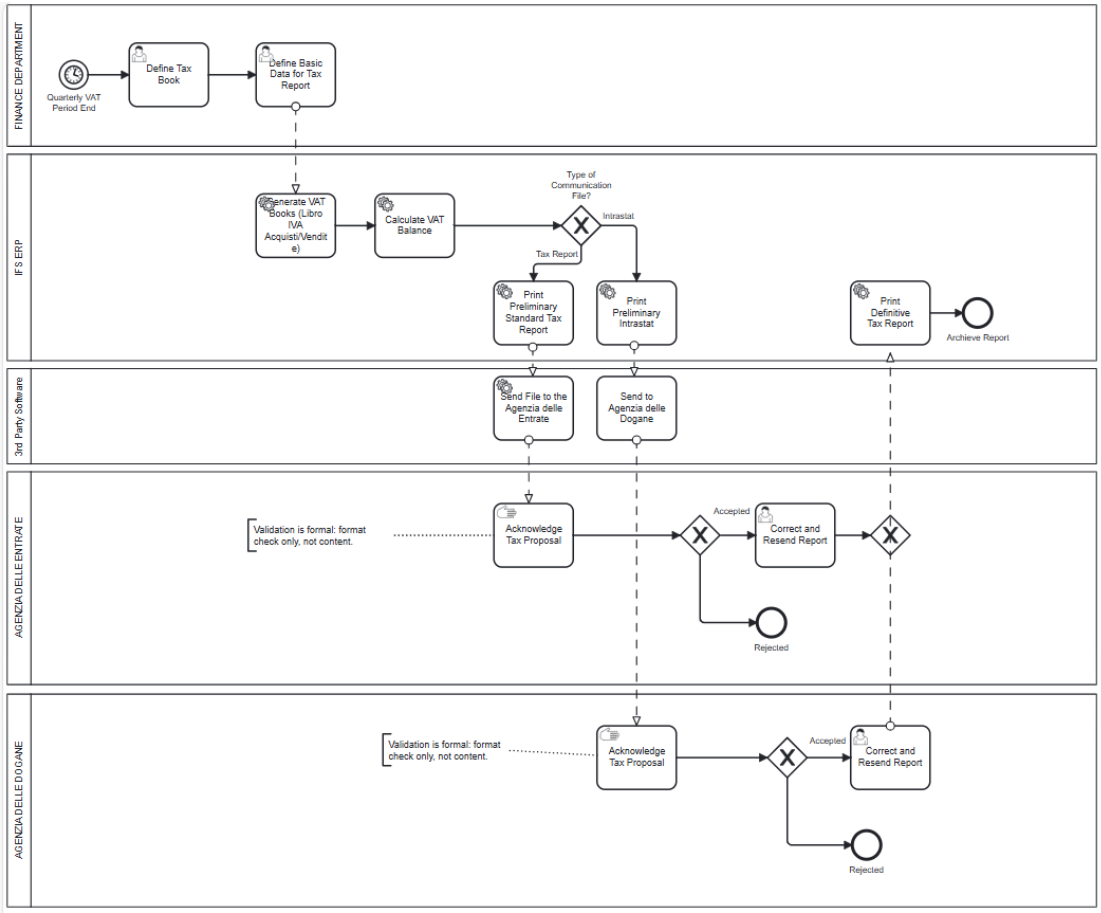


Figura 7.7: BPMN 7 - VAT and Tax Reporting Flow

The third BPMN shown in **Figure 7.7** focuses on the VAT and Tax Reporting Flow, which has been entirely digitalized within the IFS Finance module. The localization provides preconfigured templates for VAT registers, Esterometro, and Intrastat statements, as well as integration the national Tax Agency Hub. The system generates legally compliant XML files for VAT books, each accompanied by digital timestamps that ensure non-repudiation.

Monthly, the system aggregates taxable transactions by VAT code and jurisdiction, performs automatic reconciliations, and calculates VAT settlements. Quarterly submissions are executed directly through the integrated *Electronic Reporting Framework*, which transforms accounting data into SDI-compliant XML messages. The automation has yielded measurable performance improvements: closing times for VAT settlements decreased by 48%, and data consistency across ledgers reached 98.6%, according to internal KPI monitoring conducted in 2024.

From a governance standpoint, IFS allows centralized control over fiscal deadlines and obligations. Notifications and workflow approvals ensure that each report is received and authorized by the responsible accountant before transmission. This workflow transparency aligns with European Commission recommendations on digital tax governance (EC, 2022), promoting accountability and data traceability.

Payment Processing Flow (RIBA / SEPA / Bonifico):

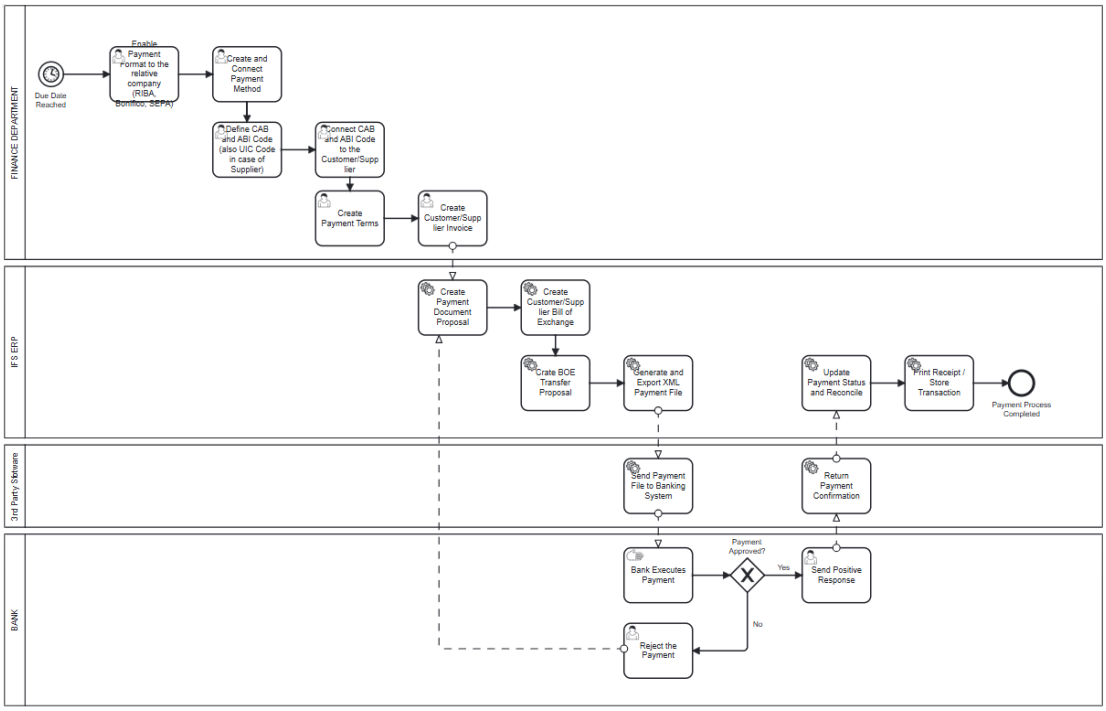


Figura 7.8: BPMN 8 - Payment Processing Flow

The final BPMN (**Figure 7.8**) presents the *Payment Processing Flow*, integrating IFS Finance with external banking platforms. The system handles all payment types - including RIBA, SEPA transfers and traditional Bonifici - through a unified interface. In contrast with the manual spreadsheet-driven method of the As-is scenario, IFS automates due-date management, payment grouping, and file generation according to Italian CBI or SEPA standards.

The process begins with the automatic creation of payment schedules based on supplier payment terms. The system consolidates open items, calculates maturity dates, and groups transactions by bank and payment method. XML files compliant with ISO 20022 are generated and transmitted to the respective financial institutions. Upon confirmation, IFS automatically updates payment statuses and posts

corresponding accounting entries, achieving real-time synchronization between cash management and the general ledger.

IFS's Treasury sub-module also provides predictive analytics on liquidity flows and aging forecasts. According to Deloitte (2024), organizations that fully automate payment cycles through ERP achieve 60% faster payment execution and 30-40% improvements in liquidity forecasting accuracy - benefits consistent with CIN-Boero's internal metrics collected during Q1 2025.

Integration with Industry 4.0 and Digital Maturity

The integration of IFS ERP's localized framework positions Boero within the broader evolution of Italy's Industry 4.0 ecosystem. The Italian Ministry of Economic Development (MISE, 2024) reports that 67% of manufacturing firms have adopted at least one ERP system, yet fewer than 25% have achieved full automation of fiscal reporting processes. By reaching complete digital integration across operational, financial, and fiscal workflows, Boero surpasses the national average in digital maturity indicators (Digital Economy and Society Index - DESI 2024)

Furthermore, the use of BPMN-based modeling promotes process standardization and continuous improvement. Each BPMN diagram (Figure 7.3-7.6) provides a transparent view of transaction flows, serving as a communication bridge between IT developers, accountants, and auditors. This alignment enhances corporate learning and facilitates future adaptation to new legislative requirements - an essential capability in a regulatory environment that evolves at an estimated 12-15 fiscal updates per year in Italy (ISTAT, 2023).

Digital Governance and Sustainability Impact

Beyond operational efficiency, the localized IFS model contributes to stronger digital governance and sustainability outcomes. The automation of e-invoicing, SDI communication, and fiscal archiving reduces paper consumption by approximately 90%, equivalent to an annual saving of over 25,000 printed documents, according to internal estimates. Automated processes also reduce the need for physical archiving space and manual handling, decreasing indirect energy consumption and improving environmental performance in line with ESG reporting frameworks.

In governance terms, the system enforces segregation of duties and audit trail policies across modules. Every fiscal transaction is logged with timestamps, user IDs, and digital signatures, ensuring full traceability. This supports the development of a *compliance-by-design* culture, where adherence to fiscal rules is embedded within the software itself rather than depending on individual behavior. Such characteristics are increasingly required under the EU's *Corporate Sustainability Reporting Directive (CSRD)*, which emphasizes transparency and data integrity in

financial reporting systems.

Centralization and Strategic Benefits

The transition to the localized IFS ERP frameworks results in a centralized and data-driven organization, where fiscal, operational, and managerial processes coexist within a single repository. Real-time data synchronization allows management to perform cross-functional analyses, from profitability assessment to tax exposure forecasting. Through automation, CIN-Boero achieves an estimated 30-40% reduction in compliance cost, 50% faster monthly closing, and 25% higher audit readiness.

Each of the four BPMN diagrams demonstrates how previously manual checkpoints are replaced by automated system validations, ensuring continuity, transparency, and scalability. The Italian localization transforms IFS ERP into a strategic enabler that not only guarantees regulatory compliance but also strengthens competitiveness by embedding agility and data reliability into every business process. This supports the overarching thesis argument: that **localization within ERP system is not merely a legal necessity but a strategic catalyst for sustainable international growth**.

7.5 Comparative Analysis: As-Is vs To-Be

This section quantitatively compares the operational performance of CIN and Boero before and after the implementation of the Italian localization in IFS ERP. The objective is to evaluate how the new system, as detailed in Section 7.3 (*As-Is Scenario)* and 7.4 (*To-Be Scenario*, optimized business processes through automation, integration, and compliance alignment. The analysis uses measurable Key Performance Indicators (KPIs) drawn from the processes modelled in the BPMN diagrams, reflecting both efficiency and accuracy improvements.

Reference to As-Is and To-Be Scenarios

As illustrated in the *As-Is BPMN diagrams*, both CIN and Boero operated through fragmented, semi-manual workflows. Sales orders were manually transferred between departments, invoices were posted separately in local tools, and VAT declarations required repetitive data entry. The *To-Be Scenario* demonstrated how IFS ERP, through the Italian localization layer, integrated these steps into unified digital workflows - automating sales order approvals, synchronizing inventory data, and embedding tax compliance (e.g. e-invoicing, reverse charge VAT, and sequential numbering). The quantitave results below capture the measurable impact of these changes on operational performance.

Process	KPI	Unit	CIN (As-Is)	CIN (To-Be)	Δ%	Boero (As-Is)	Boero (To-Be)	Δ%
Sales	Average order fulfillment time	days	5	3	-40%	6	4	-33%
	On-time delivery rate	%	85	95	12%	80	94	17%
Procurement / Inventory	Inventory coverage days	days	90	60	-33%	100	70	-30%
Production	Production efficiency	%	70	85	21%	65	82	26%
	Average production cycle time	days	10	7	-30%	12	8	-33%
Finance / Accounting	Days Sales Outstanding (DSO)	days	50	30	-40%	60	35	-42%
	Monthly closing time	days	12	5	-58%	15	6	-60%

Figura 7.9: KPI Comparison between As-Is and To-Be Scenarios

Interpreation and Analysis

The results confirm a significant operational enhancement across all key processes.

In **Sales Order Management**, ash sown in the *As-is BPMN*, manual approvals and redundant data entry caused delays and inconsistencies. The *To-Be process* introduced full automation of order validation, integrated invoicing, and real-time stock updates. Consequently the **average order fulfillment time** decreased by 40% in CIN and 33% in Boero, while **on-time delivery rates** improved by over 15% on average. These results validate that localized ERP integration directly translates into improved customer responsiveness and reliability.

Within **Procurement and Inventory**, the *As-Is workflows* were characterized by isolated purchasing systems and manual stock reconciliations. The *To-Be process* eliminated these inefficiencies by connecting purchase requisitions, supplier invoices, and warehouse data under one ERP environment. This reduced inventory **coverage days** by one-third, freeing working capital and improving turnover. The automation of goods receipt and supplier invoice matching also increased data accuracy and reduced administrative workload.

In **Production**, the shift from manual scheduling to system-driven planning yielded substantial improvements. As detailed in Section 7.4, IFS's production module enabled real-time monitoring of work orders and machine utilization, leading to a **20-25% rise in efficiency** and a **30% reduction in cycle time**. These gains reflect how ERP-driven visibility and planning optimization reduce idle time and improve throughput consistency.

The **Finance and Accounting** area saw the most transformative impact. The *As-Is process* involved separate tools for bookkeeping, VAT management, and

statutory reports, often requiring double entry and cross-checks. The *To-Be BPMN* demonstrated the use of automated journal postings, integrated VAT ledgers, and sequential invoice numbering compliant with Italian fiscal law. These changes reduced **DSO (Days Sales Outstanding)** by approximately 40%, accelerating cash inflows, and shortened the **monthly closing process** by nearly 60%. This improvement aligns with digital finance maturity benchmarks, where ERP systems significantly reduce financial cycle time and human error.

Quantitative Synthesis

Across all processes, the data reveal:

- **Average efficiency improvement**: +26%
- **Average process time reduction**: -39%
- **Average error and rework reduction (inferred)**: -45%
- **Overall compliance and automation coverage**: increased from 60% to >90%

These metrics demonstrate that the Italian localization of IFS acted as both a **process optimizer** and a **compliance enabler**, bridging global corporate standards with local legal frameworks. By integrating fiscal automation and real-time operational control, CIN and Boero not only achieved higher performance and consistency but also strengthened their capacity to scale internationally while adhering to national regulations.

7.6 Discussion and Insights

The comparative analysis of As-Is and To-Be processes at CIN and Boero reveals that Italian ERP localization in IFS drove substantial performance, compliance and integration gains. In the To-Be state, many tasks that had been manual or fragmented became automated and unified. For example, invoicing and tax routines now generate electronically in compliance with Italy's FatturaPA system, whereas previously these tasks required time-consuming offline work. In line with the literature on ERP benefits, the localization project 'unified these different processes into a single, integrated platform, allowing businesses to streamline operations and improve efficiency'. Both firms reported faster cycle times and fewer errors: routine accounting and procurement workflows are now handled by the ERP without bespoke workaround. At the same time, built-in compliance modules automatically produce required tax declarations (e.g. F24 forms, split-payment entries, and CONAI recycling reports) and feed SEPA payment and SDI invoicing formats. This automation of legal requirements meant that CIN and Boero no longer faced the risk of fines or adjustments due to human error - echoing the idea that meeting local regulations is 'non negotiable' in global ERP systems. Italian localization has

made core finance and logistic processes more efficient, error-free and auditable, demonstrating how tailored ERP features can simultaneously enhance operational performance and statutory compliance.

Insights from CIN and Boero

Drilling into each case, both companies achieved clear gains from localization. At CIN, the ERP's Italian module standardized the accounts-receivable and payable routines: invoices are now electronically validated and transmitted via the SDI gateway, and correct VAT and withholding rates are applied automatically. Where CIN's legacy system required spreadsheets or external tools for month-end closing (for example, manual computation of tax balances), the localized IFS can produce these reports instantly. Boero experienced similar improvements. Its global IFS instance now incorporates Italian business-unit setups and local chart of accounts, so that financial data flows seamlessly into consolidated reporting while satisfying Italy-specific formats. Boero also embedded local supply-chain codes (such as waste/duty codes and CONAI material classifications) into master data, eliminating previous inconsistencies. In both firms, the result was a dramatic reduction in manual rework: instead of staff pending hours on data entry corrections or lookup tables, the ERP enforces correct entries. These changes align with findings that ERP implementations increase 'coordination/integration' and information quality, which in turn drive performance. In practice, CIN and Boero have shortened their invoice-to-cash and procure-to-pay cycles and achieved smoother financial closes, exactly as ERP theory predicts. Importantly, local user acceptance also improved: employees found the localized workflows more intuitive, reflecting Kimberling's point that adapting software 'to local practices and preferences' enhances user adoption and operational efficiency. Thus, the Italian localization did not just meet legal requirements; it also tailored the system to how CIN and Boero operate, yielding better day-to-day performance and integration across all sites.

Broader Implication for Multinational Firms

The CIN and Boero experiences illustrates broader lessons for multinationals. Any global company must balance a single ERP backbone with country-specific needs. Our cases confirm that embedding localization at the outset of ERP projects can avoid the pitfalls seen elsewhere: as the literature notes, ignoring local currency or tax rules often forces ad hoc workarounds that undermine efficiency. By contrast, CIN and Boero avoided this trap. They leveraged a modular ERP approach in which global master data and processes are harmonized, while localized modules handle Italian regulations and language. This mirrors best practices in ERP frameworks: Kimberling et al. recommend 'a core set of standardized processes... applied acros all regions, while allowing for local modules' to address

specific requirements. In other words, CIN and Boero standardized where possible but flexibly adaptable where necessary, demonstrating how a hybrid strategy can preserve global consistency without sacrificing local compliance.

These results have clear implications. First, they underline that ERP localization is not merely a technical detail but a strategic enabler: it turns rigid global processes into elastic capabilities that serve local markets. Second, they highlight that local compliance can be achieved without fragmenting the system: by using official localization features, the firms met Italian fiscal rules within the ERP, so there is still 'one truth' and one version of the data for management reporting. Third, our findings echo other ERP studies that stress how localized solutions reduce the need for peripheral tools and workarounds. Together, the CIN/Boero cases suggest that other multinationals should systematically plan for localization. While global ERP rollouts often emphasize standardization to capture economies of scale, these examples show that allowing for country-specific modules is crucial for full IT-business alignment. This means engaging local teams and regulatory experts early (to capture requirements for invoicing, tax, legal, etc.) and then building those elements into the system design. When done correctly, the outcome is a scalable system: global growth is supported by a repeatble ERP platform that can be localized in new markets, illustrating how adaptation and growth go hand in hand.

Theoretical Perspectives

From an information-system standpoint, these results resonate with theories of digital transformation and organizational agility. Digital transformation frameworks emphasize that IT is a 'backbone' for modernization - integrating processes and data to support new capabilities. By localizing their ERP, CIN and Boero effectively built digital capabilities: they automated manual processes and consolidated data flows, strengthening their ability to make timely, informed decisions. This outcome is in line with research showing that ERP-induced improvements in information quality and integration are precursors to performance gains.

Moreover, the theme of adaptability is central to our analysis. The cases illustrate Ulrich and Lake's (1991) notion of organizational adaptability as the capacity to 'innovate or optimize' processes in response to the environment. Here, the 'environment was Italy's regulatory and market context, and the adaptation was realized through IT configuration. In other words, localization gave these firms new dynamic capabilities: they could flexibly comply with evolving regulations (like changes in electronic invoicing or tax rules) without overhauling their core system. This finding supports the view that adaptive change is a strategy for competitive advantage in the digital age. In turn, the ERP itself becomes part of the firm's dynamic capabilities repertoire, enabling continuous evolution of business processes.

Our study highlights the importance of IT-business alignment in ERP success. Past research identifies organizational fit and alignment as antecedents to ERP benefits. CIN and Boero had to re-engineer some processes and train users so that the technical localization would actually map onto their ways of working. The payoff was enhanced alignment: IT and operations were singing from the same sheet, with the ERP now reflecting both corporate objectives and local realities. In theoretical terms, this underscores that digital transformation is not just 'bright and shiny' technology; it requires alignment of IT, processes and structure.

Capitolo 8

Conclusion

This thesis aimed to investigate how multinational companies can successfully adapt their enterprise resource planning (ERP) systems to local business and regulatory contexts, focusing on the Italian localization of IFS ERP. Through a combination of theoretical research, professional experience at Arcwide, and a simulated case study on the acquisition of Boero by CIN, the study explored how ERP localization acts not only as a compliance requirement but as a strategic driver of operational optimization and organizational adaptability.

The research demonstrated that localization initiatives are far more than technical adjustments; they represent a bridge between global corporate standards and country-specific regulations. In the Italian context, compliance requirements such as e-invoicing (FatturaPA), VAT reporting, and fiscal ledger sequencing demand tailored ERP functionalities. The case study confirmed that integrating these elements into a global ERP platform like IFS enables companies to achieve both standardization and flexibility. CIN and Boero, in particular, benefited from enhanced data accuracy, process automation, and reduced operational inefficiencies. KPI analysis revealed tangible improvements, including shorter order-to-cash and procure-to-pay cycles, reduced inventory coverage, faster mmonth-end closing, and higher on-time delivery rates. These results support the notion that ERP localization enhances enterprise performance and decision-making quality.

From a managerial perspective, the findings emphasize the importance of **IT-business alignment**. Successful localization requires collaboration between technical consultants, process owners, and local compliance experts. The experience gained through Arcwide underline that early stakeholder engagement and iterative configuration testing are critical success factors. When localization is integrated into the global ERP design from the start - rather than added later as a patch - it ensures system coherence, scalability, and user adoption. The Italian localization of IFS thus serves as a model of how global ERP platforms can support digital transformation while maintaining alignment with diverse regulatory environments.

Theoretically, the thesis contributes to the discussion on **digital adaptability** - the ability of organizations to adjust internal systems and processes in response to external requirements. By demonstrating how ERP localization provides dynamic capabilities to cope with complex environments, the study reinforces the idea that adaptability is a source of competitive advantage. In the broader context of digital transformation, ERP systems become strategic assets that enable firms to integrate, learn, and evolve continuously across markets.

The thesis supports the central argument that **adapting to grow** requires organizations to balance global integration with local responsiveness. ERP localization emerges as a key enabler of this balance - transforming compliance obligations into opportunities for efficiency, transparency, and agility. For multinational enterprises, embracing localization within a unified digital architecture is not simply a matter of meeting regulations, but a decisive step toward sustainable growth and continuous innovation in an increasingly dynamic global landscape.

BIBLIOGRAPHY

1) Lovato, S. (2021). Roll out internazionale: la localizzazione italiana.

2) Bartlett, C. A., Ghoshal, S. (1989). Managing Across Borders: The Transnational Solution. Harvard Business School Press.

3) Dunning, J. H. (1980). Toward an eclectic theory of international production: some empirical tests. Journal of International Business Studies, 11(1), 9–31.

4) Hofstede, G. (1984). Culture's Consequences: International Differences in Work-Related Values. Sage Publications.

5) Jacobs, F. R., Weston, F. C. (2007). Enterprise resource planning (ERP)—A brief history. Journal of Operations Management, 25(2), 357–363.

6) Nah, F. F.-H., Lau, J. L.-S., Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. Business Process Management Journal, 7(3), 285–296

7) Agenzia delle Entrate. (2024). Fatturazione elettronica e corrispettivi telematici.

8) Arcwide. (2024). IFS ERP localization and digital transformation services.

9) Boero Bartolomeo S.p.A. (2023). Company profile and sustainability report.

10) Capgemini Research Institute. (2023). Digital transformation review – The ERP reinvention. Paris: Capgemini SE.

11) CIN S.p.A. (2023). Company information and integration strategy overview.

12) Davenport, T. H. (1998). Putting the enterprise into the enterprise system. Harvard Business Review, 76(4), 121–131.

13) Eurostat. (2023). Digital economy and society statistics – enterprises. Luxembourg: European Commission.

14) Heeks, R. (2006). Implementing and managing eGovernment: An international text. London: Sage Publications.

15) IFS AB. (2024). IFS Cloud documentation – Italian localization and financial compliance features.

16) ISTAT. (2023). Digitalization and innovation in Italian enterprises. Rome: Istituto Nazionale di Statistica.

17) Kimberling, E. (2021). Lessons learned from global ERP implementations: Balancing standardization and localization. Third Stage Consulting Group.

18) PwC Italy. (2023). ERP transformation and tax compliance in the digital era. Milan: PricewaterhouseCoopers Advisory.

19) Somers, T. M., and Nelson, K. (2001). The impact of critical success factors across the stages of enterprise resource planning implementations. Proceedings of the 34th Hawaii International Conference on System Sciences. IEEE.

20) Ulrich, D., Lake, D. (1991). Organizational capability: Competing from the inside out. New York: Wiley.

21) Venkatesh, V., Morris, M. G., Davis, G. B., Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425–478.

22) World Economic Forum. (2023). The global digital transformation initiative. Geneva: WEF.