



# Multi-Country ERP Projects: A Methodology for the Step-by-Step Unification of Accounting, Data, and Business Processes

Aleksey Safaralikhonov

Sr. Business Systems Manager / Acronis International GmbH, Dushanbe / Tajikistan.

ORCID iD: 0009-0000-3897-0123

## Abstract

*The methodology examines a model for the phased unification of accounting, data, and business processes in multi-country ERP projects implemented by corporate groups operating through legal entities across multiple jurisdictions. Its purpose is to formalise a sequential procedure that begins with aligning financial accounting and consolidation rules, proceeds to the governance of reference and parametric master data, and culminates in the design of end-to-end business processes. The relevance of the methodology derives from increasing regulatory fragmentation, data localisation requirements, divergent national accounting regimes, and the persistent risks of delays, budget overruns, and functional failures in international ERP programmes. The scientific novelty of the methodology lies in three interrelated contributions: a three-phase unification model, a classification of business-process architectures into templated, versioned, divided, and hybrid forms, and a construction algorithm for hybrid processes based on a universal core, a matrix of local requirements, and country-specific branches. The principal conclusion is that a sustainable multi-country ERP project depends on verifiable phase gates, embedded control activities, and information-system support for jurisdictional variability. The methodology will be useful for ERP programme managers, business and systems analysts, financial controllers, consolidation specialists, methodologists, enterprise architects, and integration teams in international companies.*

**Keywords:** Multi-Country ERP, Accounting Unification, Master Data, Business Processes, Hybrid Architecture, Consolidation, Localisation, International Companies.

## INTRODUCTION

International expansion has become the norm for both the largest corporations and mid-sized enterprises. A modern supply chain is typically organised through a network of legal entities belonging to a single group and represented across dozens of countries. Such vertical integration has implications for accounting, master data and business processes as each location must follow local regulations while adhering to an integrated corporate management model (Ebirim et al., 2024).

At the same time, most state governments are strengthening localization requirements, such as local registration of legal entities, data residency, or domestic electronic document interchange (Del Giovane et al., 2023). Conventional ERP system implementations, typically designed around a single country, encounter difficulties when deployed in a multi-country context. Also, large-scale cross-border ERP integrations fail to meet predefined schedules, budgets, or scopes (Panorama Consulting Group, 2024). The cost of these

failures manifests in direct losses, the erosion of managerial control over the group, distorted consolidated reporting, and the inability to respond to regulatory change in time.

Although the problem has been addressed in numerous publications, a robust methodological approach that would organise unification work into a sequential, verifiable procedure has yet to emerge in the literature. Most publications describe isolated aspects such as tax accounting, multi-currency consolidation, or document localisation, or offer general recommendations without articulating the order in which they should be applied (Butarbutar et al., 2023). The present methodological guide fills this gap by proposing a structured three-phase model alongside an original approach to the design of hybrid business processes.

The **object of the study** is the activity of international companies, including groups, holdings, and corporations, that conduct operational and accounting work simultaneously in several countries through a network of representative offices, branches, or subsidiary legal entities.

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The **subject of the study** is the body of methodological approaches to the phased unification of financial accounting, reference and parametric data, and end-to-end business processes within multi-country ERP projects.

The **aim of the work** is to propose and formalise a methodology for the sequential unification of accounting, data, and business processes within an international company, applicable to both organic expansion through the opening of new branches and mergers and acquisitions.

The tasks of the work proceed in five directions. The first task substantiates the need for sequential resolution of unification problems, shows why parallel resolution fails, and introduces the three-phase model as the structural basis of the methodology. The second task systematises the reasons for divergence in financial reporting across a group's legal entities and proposes a procedure to eliminate it in Phase 1. The third task identifies the body of reference and parametric data that requires centralised management, and justifies the criteria for choosing between a single information system and a localised one in Phase 2. The fourth task offers a classification of architectural variants for business processes in international companies, argues in favour of a hybrid architecture, and formulates a three-step algorithm for its construction in Phase 3. The fifth task provides a readiness checklist for each phase that gates the transition to the next.

The scientific novelty of the present methodological guide rests on three principal results of the author's work. The first result is the formulation and substantiation of a three-phase model of unification in multi-country ERP projects, in which the sequence of phases moves from financial data to reference and parametric data and then to business processes, and in which that sequence is treated as a necessary condition for integration, with alternative arrangements of the work shown to fall short. The second result is a four-fold classification of business-process architectures for international companies that distinguishes templated, versioned, divided, and hybrid processes, and that introduces the hybrid architecture as a fourth approach, which has not been described in a systematic way in the domestic literature and which overcomes the limitations of the three classical variants. The third result is a three-step algorithm for constructing a hybrid business process, which begins with the formation of a universal process core, continues with the addition of country-specific branches, and concludes with the embedding of variability at the information system level. The algorithm is illustrated through a worked example involving the firm XYZ Corp., its service S, and three jurisdictions denoted A, R, and Z, and it is supported by three sequential process diagrams.

The methodological guide is intended for practitioners who are directly responsible for the design and ongoing support of multi-country ERP projects. The target audience

includes business analysts and systems analysts who design end-to-end processes and integration scenarios for several jurisdictions, the heads of ERP programmes and product owners who decide on the composition and the ordering of work during the internationalisation of accounting, financial controllers and heads of consolidation departments who are responsible for corporate reporting under heterogeneous local accounting regimes, and the methodologists and enterprise architects who define rules for master data management and standards for automation.

The guide applies to two kinds of projects. The first is the opening of a new branch or representative office in a foreign jurisdiction. The second is the integration of an acquired foreign company into an existing group. The factual content of each phase depends on the maturity of accounting and process practices in the group at the start of the project, yet the sequence of phases remains invariant.

## **CHAPTER 1. UNIFICATION AND CONSOLIDATION OF FINANCIAL DATA**

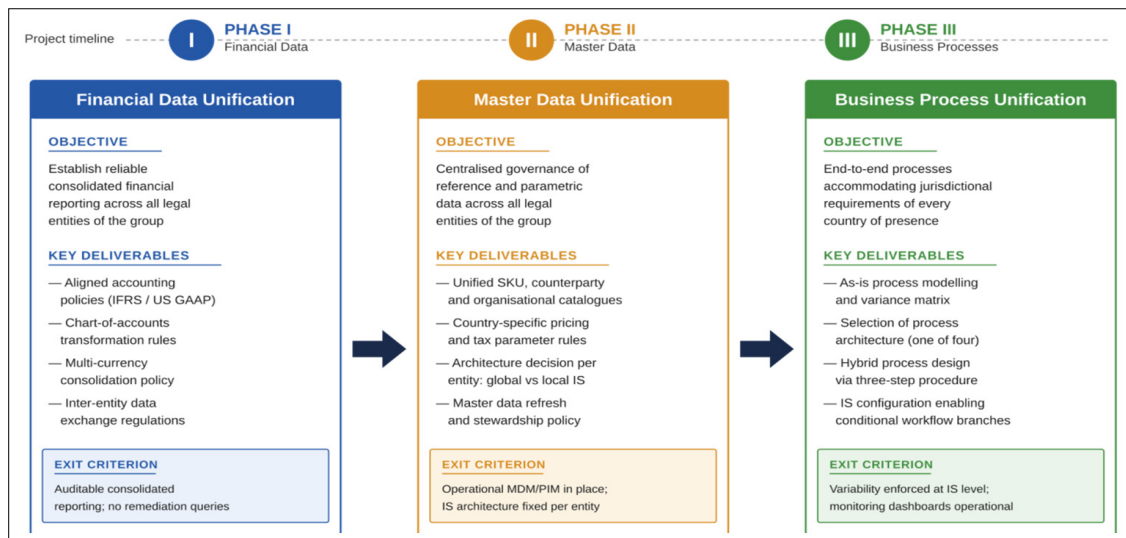
### **Premises: Why Finance Comes First**

Financial indicators serve as a litmus test of the company's health, and consolidated reporting is the principal managerial artefact of an international group and the single document in which the group appears as a whole. Without aligned financial accounting, the efficiency of business processes cannot be evaluated, since any attempt to measure a process raises the question of which accounting rules should record the outcome.

For this reason, the first phase of the methodology focuses on financial data and deliberately restricts its scope, as migration to a single ERP is not required. It suffices to secure consistent accounting policies, data transformation rules, and protocols for transferring data between legal entities and the consolidation centre. Such restraint lowers the entry threshold for the project and delivers an initial managerial result in the form of reliable consolidated reporting before the more resource-intensive work on master data and processes begins.

Because Phase 1 is the entry point to the entire methodology, the guide's general structural framework must be established before discussing the contents of the phase. The three-phase model, which runs from financial data to reference and parametric data, and then to business processes, was justified in the Introduction and is depicted in Figure 1. Each phase is described by an objective, a set of key deliverables, and an exit criterion that triggers the transition to the next phase. The structure of the model and the ordering of the phases embody a guiding principle of the methodology: the artefacts of each phase feed into the next, and any skip or rearrangement forces a return. A structural representation of the three-phase model is depicted in Figure 1.

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**Fig. 1.** The three-phase model of unification in multi-country ERP projects. Source: author's elaboration.

*Worked example.* A group operating in six countries receives recurring audit observations concerning balance discrepancies and currency revaluation. The methodology prescribes that the team should refrain from launching a single-ERP project at the outset and should instead perform four actions before completing Phase 1. The first action is the collation and alignment of the accounting policies of all legal entities. The second action is the approval of transformation rules that map data into the corporate chart of accounts. The third action is the formalisation of the currency revaluation regulation, together with the source of exchange rates. The fourth action is configuring monthly reconciliations. Only then does the audit qualification lift, and only then does the group gain a sound basis for the transition to Phase 2.

### Differences between GAAP and IFRS

In the preparation of consolidated reporting, the data of all legal entities are brought into conformity with a single accounting standard, typically US GAAP or IFRS (Monson & Kawa, 2025). Even though those standards have converged, persistent differences remain, and the differences can shift the financial result for the same transaction. The differences fall into two groups, namely those that affect the Balance Sheet and those that affect the Income Statement. Both groups must be considered when designing transformation rules. Key differences between GAAP and IFRS in balance sheet reporting are systematised in Table 1.

**Table 1.** Differences between GAAP and IFRS in balance sheet reporting

| Factor of comparison                  | US GAAP                                                                                        | IFRS                                                                                           |
|---------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Interim quarterly reporting           | The quarterly report is an integral part of the fiscal year and requires an MD&A section       | The interim report is treated as a stand-alone period, and MD&A is permitted but not mandatory |
| Order of line items                   | Listed by decreasing liquidity from the most liquid to the least liquid                        | Listed by increasing liquidity from the least liquid to the most liquid                        |
| Balance-sheet structure               | Current assets - non-current assets - current liabilities - non-current liabilities - equity   | Non-current assets - current assets - equity - non-current liabilities - current liabilities   |
| Recognition of contingent liabilities | Probability above 75 percent                                                                   | Probability above 50 percent                                                                   |
| Investment property category          | Not used. All property is classified within Property, Plant and Equipment, abbreviated as PP&E | A distinct category exists for property held for capital appreciation or for lease             |
| Inventory valuation methods           | FIFO, LIFO, and weighted average are admissible                                                | Only FIFO and weighted average are admissible. LIFO is disallowed                              |
| Property, plant and equipment         | Only the cost model is admissible. The revaluation model is disallowed                         | Both the cost model and the revaluation model are admissible                                   |
| Reversal of inventory impairment      | Prohibited                                                                                     | Permitted under prescribed conditions                                                          |
| Deferred taxes                        | Classified as either current or non-current. Notes are optional                                | Classified only as non-current. Notes are mandatory                                            |

A similar set of divergences applies to the Income Statement and concerns revenue recognition, expense classification, development costs, and the treatment of non-recurring items. A summary comparison is presented in Table 2.

**Table 2.** Differences between GAAP and IFRS in the Income Statement (based on Salotti, 2024)

| Factor of comparison                              | US GAAP                                                                                     | IFRS                                          |
|---------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------|
| Title of the report                               | Statement of Operations                                                                     | Statement of Profit or Loss                   |
| Format of the report                              | A prescribed structure is required, either single-step or multi-step                        | No rigid format is prescribed                 |
| Revenue discounting                               | Required in a narrow set of situations                                                      | Required where cash inflows are deferred      |
| Recognition of software revenue                   | Vendor-specific objective evidence of fair value, known as VSOE, is required                | No specific VSOE-style requirement is imposed |
| Development costs                                 | Recognised as expenses of the period in most cases                                          | Capitalised when criteria are met             |
| Changes in pension plans for prior periods        | Initially recorded in other comprehensive income, abbreviated OCI, and amortised thereafter | Recognised in profit or loss without delay    |
| Recognition of liability-related gains and losses | A corridor method may defer recognition                                                     | Immediate recognition in OCI                  |
| Additional line items in the report               | Permitted but not highlighted                                                               | Recommended in order to enhance relevance     |
| Extraordinary items                               | The concept was abolished in 2015                                                           | The concept does not exist                    |
| Non-GAAP measures within statutory statements     | Generally prohibited within statutory financial statements                                  | Permitted subject to disclosure conditions    |

The practical implication is that aligning the charts of accounts alone is insufficient when designing transformation rules. The methodologies for asset valuation and revenue and expense recognition in the local books must either align with the corporate standard from the outset or be governed by a documented adjustment for every divergence. Otherwise, an arithmetically correct consolidation will yield a substantively distorted result.

*Worked example.* A US subsidiary applies LIFO to inventory valuation, while the corporate reporting follows IFRS, which forbids LIFO. The methodology prescribes that, during Phase 1, the team should record the divergence in the register of adjustments, agree on a monthly rule for restating inventories from LIFO to a weighted-average basis, and automate that rule within the consolidation tool. Without such a step, the group's consolidated margin would be systematically overstated.

A common misconception holds that the regulatory unity of the European Union implies a coincidence of national charts of accounts within it. Each country retains a national chart of accounts, and IFRS, in most cases, applies only to the reporting of publicly traded companies. Statutory reporting of subsidiaries follows domestic rules.

In Germany, the prevailing standard is the Handelsgesetzbuch, abbreviated HGB, which is the domestic counterpart of GAAP. Alongside the standard itself, two standardised charts of accounts are used. The first chart, SKR 03, is oriented toward trading enterprises. The second chart, SKR 04, is oriented toward manufacturing enterprises. A group that combines

German legal entities of varying profiles may therefore find that its own subsidiaries within a single country rely on different charts of accounts (Hossfeld, 2025).

In France, the prevailing standard is the Plan Comptable Général, abbreviated PCG, which is issued by the Autorité des Normes Comptables and which is referred to by the acronym ANC. The use of PCG is mandatory for the majority of French companies, and even when the accounting of a group is standardised under IFRS, local reporting follows PCG, with the forms of primary documents tied to it (Plan comptable général règlement ANC n° 2014-03, 2026).

In Poland, the national standard known as Ustawa o rachunkowości remains mandatory for most local legal entities, and updated specimen charts of accounts are issued by professional associations on a regular cadence (Jurewicz, 2024).

The methodological implication is that, for each EU country of presence, the applicable accounting standard, the chart of accounts, the document forms, and the transformation rules into the corporate chart must be fixed separately. A one-size-fits-the-EU approach does not work.

*Worked example.* A group opens a trading representative office in Germany on SKR 03 and acquires a manufacturing asset on SKR 04. The methodology requires that the team prepare two independent transformation matrices into the corporate chart of accounts, that the selection of the appropriate matrix be driven by the entity identifier within the consolidation tool, and that the period-closing checklist include the reconciliation of balances across both matrices.



## Technical Complications of Consolidation

Once accounting policies have been brought into line with a single standard and the valuation method divergences have been recorded, the technical tasks of consolidation move to the forefront. The tasks appear straightforward, yet they generate four persistent risk categories, each requiring its own methodological response.

The first class concerns the incompleteness of the unification of accounting policies. Even after the centralised approval of corporate principles, individual legal entities may continue to apply local policies for tax optimisation, to comply with local legislation, or because the alignment process has not been completed. Every such exception must be recorded in an exception register and must be covered by an individual adjustment at consolidation.

The second class concerns mismatches in the many-to-one chart of accounts. The case is the most common one in which the local chart is more granular than the corporate chart, and several local accounts aggregate into a single consolidated account. The case is resolved using a mapping table maintained by the finance function and applied through automation in the consolidation tool.

The third class concerns mismatches in the one-to-many charts of accounts. The case is substantively more complex, in that balances of one local account must be distributed across several consolidated accounts. A direct mapping is unattainable here, and allocation rules are required. The simplest technical solution is to introduce an additional analytical segment within local sub-accounts, recording the share for each consolidated account. The allocation rule itself must be agreed upon by the finance functions involved and reviewed on a recurring basis.

The fourth class concerns multi-currency consolidation. A group whose entities keep books in several functional currencies must define and document the source of exchange rates, which tends to be the central bank of the parent company's country or an agreed international source, alongside the cadence of revaluation, the treatment of exchange differences, and the rules for translating balance-sheet and Income Statement items. Those rules must be expressed in methodological and technical forms as parameters of the consolidation tool (Emuebie et al., 2022).

From an automation perspective, consolidation is delivered via ETL or ELT procedures that load data into a data warehouse, via an enterprise service bus, via a consolidation module within the ERP, or via a dedicated consolidation application such as Hyperion, OneStream, or BPC. The choice of instrument depends on the maturity of the group's IT landscape. The instrument must support all four task classes.

*Worked example.* A Brazilian entity uses a single local account titled "Taxes and Fees" that aggregates nine taxes, whereas

the corporate chart of accounts requires segmentation by tax type. The methodology classifies the case as a one-to-many risk. The allocation rule for distributing amounts across tax types is derived from tax declarations; an analytical segment is introduced into the local account; the distribution is automated within the ETL procedure loading the data warehouse; and a monthly reconciliation is configured.

## Checklist for Completing Phase 1

Readiness for the transition from Phase 1 to Phase 2 is determined by completing five mandatory items; skipping any one item requires a return to Phase 1 at a later stage.

The first item requires written confirmation from the finance functions of every legal entity in the group on the applicability of the unified accounting policies, alongside an agreed and approved register of recorded exceptions. The second item requires that every exception, every divergence in valuation method, and every other departure from the corporate standard be backed by a documented rule for converting financial measures into the figures of the consolidated books.

The third item requires that, for every legal entity that uses a chart of accounts differing from the corporate one, an agreed mapping table be in place that records the many-to-one and one-to-many cases together with the allocation rules for the latter. The fourth item requires that, for every legal entity whose functional currency differs from the currency of consolidation, the source of exchange rates, the cadence of their application, the procedure for revaluing balance-sheet and turnover items, and the treatment of exchange differences be agreed and documented.

The fifth item requires that the quality and timeliness of the data flowing into consolidation be tested, that recurring reconciliations be configured and operating, and that the residual deviations at the monthly close remain below the agreed materiality threshold.

*Worked example.* During a review of Phase 2 readiness against item 1 of the checklist, confirmations have been received from 5 of 6 legal entities, while a formal confirmation is still pending for the 6th, even though no actual divergences have been detected. The methodology prescribes that Phase 2 should not be opened until the confirmation has been obtained, since this safeguards against a risk that would otherwise materialise later during the next audit or upon a unilateral change of local policy.

## CHAPTER 2. UNIFICATION OF REFERENCE AND PARAMETRIC INFORMATION

Once Phase 1 is complete, the group will have reliable, consolidated reporting and rules for transforming accounting data. On that foundation, the team can move on to unifying reference and parametric information about goods and services, counterparties, pricing rules, and tax parameters.

Phase 2 resolves two related sub-problems. The first sub-problem is the centralised management of master data through an MDM or PIM system. The second sub-problem is the architectural choice between a single corporate IS and a localised one for each legal entity.

The terms reference data and parametric data, as used throughout the guide, follow the established distinction in the Master Data Management literature. Reference data are stable classifiers of the objects and subjects of business activity such as, for example, goods and services (identified by SKU), counterparties, organizational units, warehouses, bank accounts, and currencies. Parametric master data or operational master data characterize the parameters and rules that define how reference entities participate in business transactions. Examples of parametric master data include price lists and pricing conditions, tax rates and tax schemes, credit limits, delivery terms, and approval hierarchies. The distinction matters for the architecture of MDM systems because reference data changes seldom and are stored in centralised catalogues, whereas parametric data changes regularly and require support for versioning, activation dates, and country-level parameterisation (Ali et al., 2021).

### **Reference Data: Goods, Counterparties**

The unification of reference data appears simple at first sight, in that one can set up a single SKU coding scheme and a single counterparty register and then propagate them across all entities. Constraints emerge at the level of names. The legislation of the People's Republic of China requires that the names of all goods placed on the market be rendered in simplified Chinese, which directly shapes the rules for storing SKU names (U.S. Department of Commerce, International Trade Administration, 2024).

Export practice further requires that SKU names carry technical parameters, with a representative example being "12V Waterproof LED Flood Light, Model X1200, 30W," because such names support classification under HS codes and accelerate customs clearance (Nomenclature overview, n.d.). The MDM or PIM system must therefore hold multiple name variants for a single SKU, covering the corporate, localised, and export variants.

For certain markets, a stand-alone catalogue item is warranted rather than localising the single corporate one. The inverse task is to link different SKUs that represent the same product for consolidated analytics. Technically, this is achieved by introducing a corporate product identifier that ties all the local SKUs together.

A similar story applies to the counterparty register. International operations engage local recording requirements. Bulgarian commercial law mandates that the name of a foreign counterparty be recorded in Cyrillic (Commercial Act Targovski zakon, Article 7(3), Bulgaria, 1991). The MDM

system must therefore hold both the Latin and the Cyrillic forms simultaneously, and the rules for selecting one form or the other when documents are issued must depend on the issuing legal entity's country.

*Worked example.* Prior to opening a Bulgarian representative office, the group MDM used only the Latin form of the counterparty names. The methodology prescribes that the catalogue should gain a field titled "Name in Cyrillic," that the population of the field should be handed to the local team, that the Cyrillic form should be used in the primary-document templates of the Bulgarian entity, and that the population check should be embedded in the monthly closing routine. This eliminates the situation in which a document that is correct under the corporate standard is rejected by the Bulgarian tax inspectorate.

### **Parametric Data: Prices, Discounts, Taxes**

Parametric master data, within the MDM terminology, covers prices, discounts, tax parameters, and the terms governing interactions with categories of counterparties, and it determines how reference entities such as SKUs and counterparties participate in sales and procurement transactions. In a multi-country context, this data is most sensitive to local regulations, since the rules governing price formation, discount limits, and tax regimes are set by each country's national legislation. Three principal blocks merit consideration, namely pricing, limits on discounts, and the tax classification of counterparties.

The first block concerns pricing and VAT. A base sales price or MSRP is stated under different rules in different jurisdictions. Some countries require the price to be displayed with VAT included, while others require VAT to be added separately. The corporate price-storage system must therefore support a "price kind" attribute taking the values "VAT-inclusive" and "VAT-exclusive," and it must convert the price to the required kind when a price list is generated. Ignoring the distinction either understates revenue or overstates the price to the consumer.

The second block concerns limits on discounts. The use of discounts can be limited by national legislation. A widespread instance is the prohibition of selling products below cost as a competition-protection measure (Mandrescu, 2022). Pricing rules must therefore include a country-level validation, and for each country, the forbidden combinations of price, discount, and cost must be defined. Technically, this is delivered either through the ERP's pricing engine or a dedicated CPQ module.

The third block concerns the tax classification of counterparties. Within the European Union, the taxation of transactions between a supplier and a customer depends to a substantial degree on their relative geographical positions. From the perspective of a company branch in the EU, a counterparty falls into one of four categories.

The first category includes counterparties located outside the European Union, with a representative example being a Turkish supplier serving a German entity. The second type is related to counterparties not located in the branch country, but still in another EU member state. For instance, a supplier located in Italy would be in this category when selling goods to an entity in Germany. The third category consists of counterparties in the same country as the branch, but in a different region, for example a Bavarian supplier selling to an entity in Hamburg. The fourth category includes counterparties located within the same region as the branch, where both the supplier and the customer reside on the same federal land.

Each category triggers distinct requirements regarding VAT rates, document formatting, and entity registration in tax-monitoring systems. The category must be an attribute of the counterparty within the catalogue and must be invoked automatically whenever a transaction is generated. An absence or an error in this attribute leads to an incorrect tax computation or to a malformed document structure.

*Worked example.* When a trading entity is opened in Germany, the team enters four changes into the MDM. The first change adds a “price kind” attribute to the SKU card and sets its value to “VAT-exclusive” for German price lists. The second change introduces the rule that the minimum price cannot fall below the cost into the pricing engine. The third change introduces an “EU category” attribute on the counterparty card. The fourth change introduces a check that the VAT rate on the document matches the value implied by the attribute. Without these changes, the first month of the German entity’s operations would result in a body of documents requiring manual rework.

There is a complex framework of indirect taxation (VAT / GST) on sales into and between countries in Latin America, and the applicable legislation is in a constant state of flux. The process of keeping abreast of developments and configuring enterprise software to deal with these developments is a meaningful burden.

Three models are used in Latin America to levy VAT on foreign suppliers of digital services. The first model consists of making the foreign supplier register as a VAT taxpayer in the consumer’s country. The second model envisaged is the intermediaries (payment processors, acquiring banks) withholding tax on payments before passing this withholding to the budget. The third model is a hybrid, in which the supplier may select either route or apply a combination of the two (Bal, 2024).

Colombia and Argentina were the first to introduce VAT on digital services supplied by foreign providers in 2017, followed by Chile, Uruguay, Costa Rica, and Mexico. Each country implemented its own hybrid of the models. Mexico

has required, since 2020, that foreign suppliers register and appoint a legal representative. Colombia permits a choice between registration and intermediary withholding. Chile has applied intermediary withholding since August 2022 for non-registered individuals.

Alongside VAT, the region operates a system of withholding taxes that apply at the source to cross-border payments for services and for intangible assets. The rates range from five to thirty percent and depend on the source country of the payment, on the existence of a double-taxation treaty, and on the nature of the payment. A supplier who fails to account for the withholding tax receives less than the contractually agreed amount, while a buyer who fails to withhold faces claims from the tax authority (Morini et al., 2024).

The implication is that the counterparty register and the SKU attributes for business in Latin America must include additional parameters. For a counterparty, the parameters include the country of residence, the VAT regime, the withholding tax rate, and the presence of a double taxation treaty. For an SKU, the parameter specifies the payment type classification for withholding-tax purposes, such as royalty, technical service, or digital service. Without these attributes, a price list and the primary documents cannot be issued correctly.

*Worked example.* A SaaS company launches sales in Mexico, Colombia, Argentina, and Chile. The methodology prescribes that the team should determine the applicable VAT regime for each country, which ranges from mandatory registration to intermediary withholding, that the corresponding attribute should be introduced into the MDM, that the subscription should be classified for withholding-tax purposes, and that the pricing engine should gain a rule adjusting the price by the amount withheld. Only thereafter does the sales financial model become predictable.

### **Single Corporate IS Versus Localised Software**

Once master data management has been designed, the team turns to one of the costliest architectural decisions in Phase 2: whether to rely on a single corporate ERP across all legal entities or to adopt localised domestic software in some countries. A universal choice is uncommon and depends on a country’s regulatory maturity, industry specifics, the size of the legal entity, and the group’s strategy.

A strong regulatory example comes from the Accountancy Act of Bulgaria, which prescribes requirements for bookkeeping software, including compliance with national law, data processing in the required format, and the issuance of reports in Bulgarian. These requirements place a substantial portion of international ERP systems beyond the admissible range when the vendor lacks a certified localised version (Accountancy Act Bulgaria, 2024). A comparative evaluation of the two approaches against six criteria is given in Table 3.

**Table 3.** Single corporate IS versus localised software compared against six criteria (based on Cao et al., 2024)

| Criterion                                                                                                           | Single IS: advantages                                                                                                            | Single IS: risks                                                           | Local software: advantages                                                                         | Local software: risks                                                                          |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Compliance with country regulators                                                                                  | -                                                                                                                                | Risk of missing certification and the need to adapt document forms locally | Generally already certified and aligned with the regulator                                         | -                                                                                              |
| Integration with state systems such as e-invoicing                                                                  | An international integration provider already used in other countries may be reused                                              | A dedicated integration module may need to be built                        | Integration is generally available out of the box                                                  | -                                                                                              |
| Support for corporate accounting and automation requirements                                                        | Fully supported                                                                                                                  | -                                                                          | -                                                                                                  | May call for substantial customisation                                                         |
| Support for local specifics such as taxes, fiscal devices, interface localisation, work under unstable connectivity | -                                                                                                                                | May require both configuration and substantive customisation               | Capabilities are already embedded                                                                  | -                                                                                              |
| Ease of integration with the head office                                                                            | A single IS has no internal barriers to data exchange                                                                            | Some country-driven tuning of the exchange may be required                 | -                                                                                                  | The integration must be designed and supported                                                 |
| Support, training, and workforce interchangeability                                                                 | Adding a branch does not call for material headcount growth, staff are interchangeable, and local steps can be hidden from users | Round-the-clock support across time zones may be needed                    | A local support team and software may prove cheaper, and adaptation time of new staff may be short | A dedicated team in every country is costly to sustain and centralised governance grows harder |

No universal answer follows from the table, because each row contains both advantages and risks for each option. The methodologically sound move is to apply the criteria to a specific legal entity in a specific country. For one entity, inclusion in the global ERP is rational. For another entity within the same group, localised software with integration is rational. Table 3 provides the frame, and the final choice remains situational.

*Worked example.* A group opens branches in Hungary for trade, in Bulgaria for manufacturing, and in Japan for R&D. The application of the criteria in Table 3 yields three distinct decisions. Hungary fits the global ERP model because there are no specific regulatory requirements. Bulgaria calls for localised software due to the Accountancy Act and the integration with the NRA. Japan also calls for localised software due to interface localisation and country-specific tax systems. One group, three legal entities, two architectural decisions, with each one justified by a single set of criteria.

### Checklist for Completing Phase 2

Readiness for the transition from Phase 2 to Phase 3 is determined by five control items. The first item requires that, for every reference catalogue and every type of centrally held parametric data, the requirements of the countries of presence be collected and agreed upon, and that a single

data model be in place that supports the identified local requirements. The second item requires that, for every pair of a corporate master source and a local accounting system, a technical specification be in place for the integration scenarios, including the data composition, update cadence, error handling, and the owner responsible for resolving disagreements. The third item requires that the demands of every country of presence regarding the accounting software in use be collected and systematised, including regulatory requirements on software, document forms, supported languages, and mandatory statutory reporting. The fourth item requires that the specifics of the tax legislation of every country of presence be recorded in the portion that drives the design of operational processes, including VAT rates and regimes, withholding tax, special counterparty categories, and limits on discounts. The fifth item requires that, for every legal entity of the group, a justified decision on the choice between a single IS and localised software be adopted on the basis of the criteria of Table 3, that the decision be documented, and that it be approved by the finance and IT leadership of the group.

*Worked example.* During a Phase 3 readiness review, the decision on the IS architecture for the Brazilian entity is postponed to a later date. The methodology prescribes that Phase 3 should not be opened until the decision has



been made, since the design of processes rests directly on the knowledge of the system within which each step is delivered.

### **CHAPTER 3. UNIFICATION OF BUSINESS PROCESSES: THE HYBRID MODEL**

#### **Why Classical Approaches Fail in Multi-Country Contexts**

When Phases 1 and 2 are complete, the integration loop is already operational, since data is collected, transformed, and delivered to the consolidation centre on time. Observation, however, reveals that processes that bear the same name across countries are implemented in ways that diverge at the structural level. The differences are not random and trace to four stable groups of causes.

The first group covers divergent legislative and regulatory requirements that countries impose on the admission of goods to sale, including border-crossing procedures, the obtaining of permits and certificates, and packaging and labelling demands. Those demands directly shape the product lifecycle and the embedded approval steps.

The second group covers divergences in business conduct and document flow between countries, including document formats, the obligatory nature of issuance and recipients, and the order and deadlines for transfer. In some lines of business, specific requirements apply to the firm's organisational structure or to the keeping of registers.

The third group covers the traditions and established practices of doing business in a region or country, including customer expectations, contract culture, the use of intermediaries, and advance payment and guarantee practices.

The fourth group covers cross-border movements and transactions, including transfers of employees between entities of different countries, intra-group debt transfer, transfer pricing, and intra-group cross-border services. Such transactions are, by their very nature, impossible in a single-country context and require a separate design.

Three substantive illustrations clarify the nature of these differences. The first illustration concerns a company that manufactures radio-transmitting equipment. In one of its markets, national legislation permits only certain frequency bands, and an act that would broaden them is delayed. The company is forced to either maintain two versions of the product in parallel or suspend sales. In either case, the processes governing lifecycle, support, and supplier interaction must be split by version or parameterised by country. The second illustration concerns India, where GST legislation requires the issuance of three copies of a tax invoice marked ORIGINAL FOR RECIPIENT, DUPLICATE FOR TRANSPORTER, and TRIPLICATE FOR SUPPLIER. The requirement extends beyond a document template, as the sales process must include the steps of printing and registering

the three copies. Comparable demands exist in dozens of countries (Rule 48, 2017). The third illustration concerns an employee who has filed a claim for the reimbursement of travel expenses and who has then been transferred to a group entity in another country before the payment cycle closes. Under the new circumstances, the source entity cannot settle the claim through a simple bank transfer, since an agreement on the transfer of liability between the entities, a cross-entity remittance, and an assignment of debt are required. A simple single-country workflow yields a whole sub-tree of operations in a multi-country context.

The four groups of causes and the three illustrations point to a common conclusion. The classical approaches collide with a fundamental tension between pursuing a global optimum through unification and the binding requirements of local markets (Park et al., 2024). Resolving the tension lies in designing an architecture that combines a global strategy with local delivery, and the subsequent sections of the chapter pursue that goal.

#### **Defining Business Processes and Control Activities**

Before the architectural variants are examined, the terminology calls for refinement. The widespread view that a business process is a sequence of actions leading to an outcome is insufficient, as it fails to capture the most important property of a process: the system of guarantees embedded within it that secures the achievement of the goal.

According to the ABPMP BPM CBOK 4.0, which serves as the foundational guide for business process management, a management process secures conformity with operational, financial, regulatory, and legal goals, while control activities are special check points for the legitimacy of the process and are intended to prevent, detect, or correct undesirable states, or to alter the course of the process when a threat to the goal arises (Benedict et al., 2019).

In other words, a business process is a coordinated sequence of actions and checks that guarantees that the outcome conforms to the requirements or, at the earliest feasible stage, signals that the goal cannot be reached. Control activities are an integral part of the process and do not form a separate layer above it.

In a multi-country context, a process that operates without disruption in one country may lose some control activities in another, since a check that makes sense within one jurisdiction can prove redundant or insufficient within another. For that reason, the unification of processes within an international company involves unifying the control system that secures the process goal across every country of presence, while the alignment of step sequences plays a secondary role.

*Worked example.* During the replication of the process in another country, the step requiring an advance payment as

a mandatory control activity was mechanically removed, on the grounds that advance payments were unusual there. Over six months, the country accumulated trade receivables equal to three months of revenue. The methodology prescribes that a control activity should not be removed without a replacement. An alternative that achieves the same goal must be defined, such as client scoring, a bank guarantee, or a limit on the scope of work until the first payment is received.

#### Four Architectural Variants for Business Processes

A systematisation of practice yields four architectural variants for processes within an international company. Each variant has its own scope of application, strengths, and weaknesses. No single variant takes precedence in all conditions, although a regular progression from the simple to the advanced emerges in the comparison. A summary appears in Table 4.

**Table 4.** Four architectural variants for business processes within an international company

| Architecture                                              | Features                                                                                                                                                                                                                                            | Advantages                                                                                                                                                                                                                                  | Drawbacks                                                                                                                                                                                                                        |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Templates as upper-level unified BPs</b>               | Headquarters or a regional office formulates incomplete processes that capture only the upper level. Detailed step definitions are delegated to legal entities or countries.                                                                        | A first move toward unification when local software differs. Modest design cost. Helps surface local specifics and make them visible.                                                                                                       | Calls for local analysis teams and central oversight of their work. The differences across countries make it harder to manage and staff substitutes. Conformity to the template does not imply conformity to the overall policy. |
| <b>Versioned processes by country or by country group</b> | End-to-end process variants are formulated for each country or country group. Several stand-alone processes coexist for the same business task.                                                                                                     | Each process aligns fully with its market's specifics. Sequential transparency for the participant. Analyst teams understand every step of the process.                                                                                     | The number of duplicating processes spirals out of control. Management loses track of the differences between versions. Any change of business logic forces updates to every version.                                            |
| <b>Divided processes by management level</b>              | Headquarters or a regional office defines only the requirements on positioning and terms and the processes that govern interaction between legal entities. Local processes are formed on the ground and do not directly intersect with global ones. | Independent management of processes at each level becomes convenient. Each manager works within a clear zone of responsibility. Local adaptation is easy.                                                                                   | Management loses sight of local specifics. Continuous oversight of the conformity of local processes to corporate rules is required. Local analysis teams are needed.                                                            |
| <b>Hybrid two-level and multi-level processes</b>         | A single end-to-end process is formulated, with the specifics of each market embedded within it. No process versioning exists, and variability is achieved through parameterisation and conditional branches.                                       | End-to-end processes are transparent to all participants and aligned with the group's policies. Easy modification when business or local conditions change. Smooth movement of human resources, since the common process remains unchanged. | High requirements on the qualifications of business analysts and local experts. May call for system enhancements that hide entity-specific operations from users.                                                                |

The first three variants are delivered by in-house business analysis functions and are documented in the literature. The hybrid architecture, by contrast, calls for a methodologically rigorous construction procedure, with the difficulty lying in the design of variability inside a single process. The algorithm for that procedure constitutes the author's contribution within the present guide.

*Worked example.* A group operating across five countries discovers that its processes have been designed under different architectures without conscious choice. The financial close runs as a template, sales as country versions, and HR as divided processes. The methodology prescribes that Table 4 serve as an audit instrument and that, for each

process, the current and target architectures be identified. Not every process must turn hybrid, though the choice of architecture must be deliberate.

#### The Hybrid Model: A Three-Step Construction Algorithm

A hybrid process is built by sequentially enriching a universal core with local branches. The procedure can be expressed as a three-step algorithm. The first step formulates a base or templated version of the process that captures the general corporate policy without the details of country-specific differences. The second step collects and systematises local market requirements and identifies which can enter the

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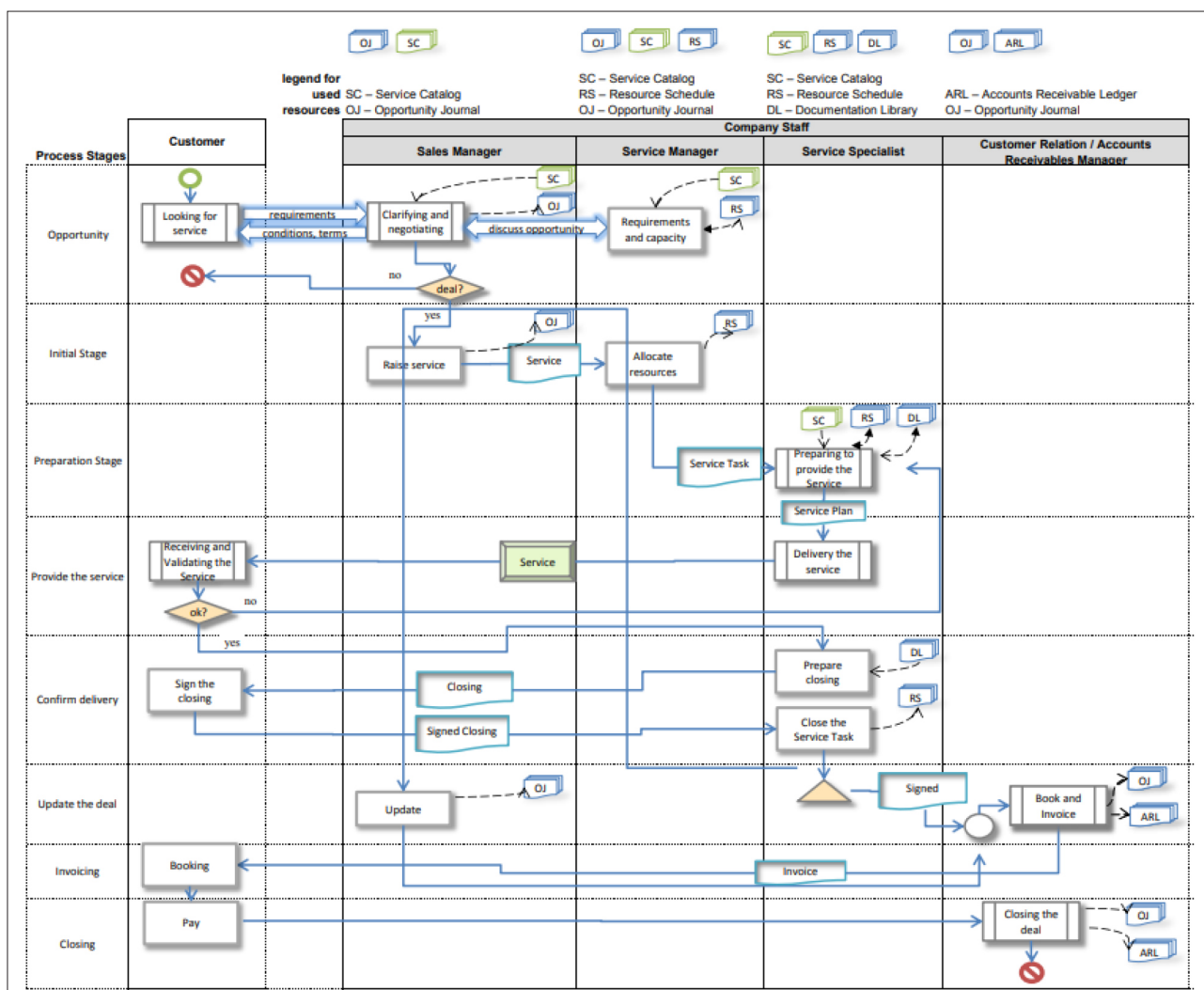
universal core as mandatory for all countries and which must remain variable. The third step designs a country branch of the process for every variable requirement and ensures its support at the information-system level by hiding irrelevant steps from the user, activating steps conditionally by country, and parameterising them through the reference catalogues.

Consider the case of XYZ Corp., service S, and countries A, R, and Z. The company XYZ Corp. delivers consulting services in countries A, R, and Z. A new service, S, is being launched in these markets, and all necessary certificates have been obtained. The service is delivered on customer request. The business-process card is shown in Table 5 below.

**Table 5.** Fragment of business-process card

|                               |                                                                                                                                                                                                                                        |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Business Process Name</b>  | Delivery of the consulting service S to customers in countries A, R, Z (version 0.1)                                                                                                                                                   |
| <b>Business Process Owner</b> | Business analyst A                                                                                                                                                                                                                     |
| <b>Process Boundaries</b>     | From receipt of the customer request to transfer of documents into the AR department, namely Accounts Receivable, Collections, in line with company rules, the service card, and the legislative requirements of countries A, R, and Z |
| <b>Process Activities</b>     | Receipt of the request, negotiation of terms, preparation for delivery, documentation of the obligations, actions, and outcomes                                                                                                        |
| <b>Process Roles</b>          | Customer, sales department, consulting department, AR department                                                                                                                                                                       |
| <b>Process Events</b>         | Receipt of a request from the customer. Closure of documents for the delivered service                                                                                                                                                 |
| <b>Process Risks</b>          | Lack of resources to deliver the service. Failure of the customer to meet the conditions of delivery. Dissatisfaction with quality. Delayed payment. Force majeure                                                                     |

The first step of the algorithm builds an upper-level schema of the process that omits the country details. The base version includes the stages of opportunity, initial stage, preparation stage, provide the service, confirm delivery, update the deal, invoicing, and closing. A graphical representation in the Samed notation is shown in Figure 2.



**Fig. 2.** The base version of the process for delivering service S

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The base process contains no steps specific to a single country, and, in that sense, it has the same structure as the template from the first architecture in Table 4. Within the hybrid architecture, however, the base version serves as the starting point for further work and is not the final outcome.

The second step of the algorithm analyses local markets and collects the requirements governing the delivery of service S in countries A, R, and Z. The identified requirements are shown in Table 6.

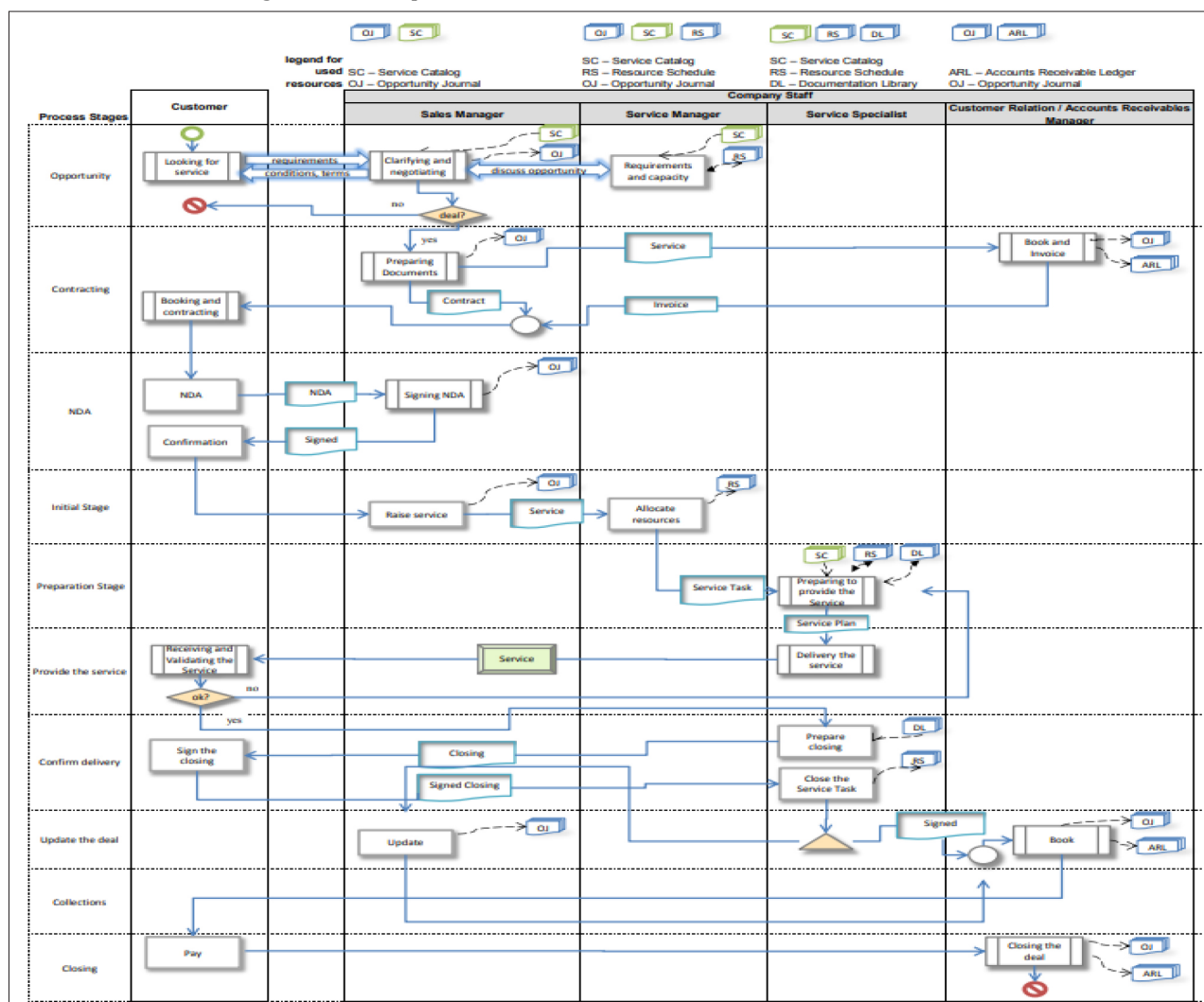
**Table 6.** Local specifics of delivering service S in countries A, R, Z

| Specific                                                              | Country A | Country R | Country Z |
|-----------------------------------------------------------------------|-----------|-----------|-----------|
| Consulting services require the price to be fixed before delivery     | Yes       | Yes       | No        |
| Advance payment, full or partial, of consulting services is mandatory | Yes       | No        | No        |
| Signing a non-disclosure agreement, abbreviated NDA, is required      | No        | Yes       | Yes       |
| Signing a service contract is required                                | No        | No        | Yes       |

The matrix is analysed against two criteria: requirements that apply in the majority of countries and can enter the universal core, and requirements that exhibit variability across countries and must be formalised as country branches.

In the example, the fixing of the price before delivery, the signing of the NDA, and the signing of the contract apply in the majority of countries and do not conflict with the remaining requirements, so all three enter the universal core. The mandatory advance payment remains variable, as it is required for country A but inappropriate for countries R and Z.

Continuing the second step yields an intermediate version of the process with an enriched core. After these decisions are applied, the process takes an intermediate form in which the universal core has been enriched with the contracting and NDA-signing steps. A graphical representation of the intermediate version is shown in Figure 3. The universal core has been enriched with the Contracting and NDA steps.



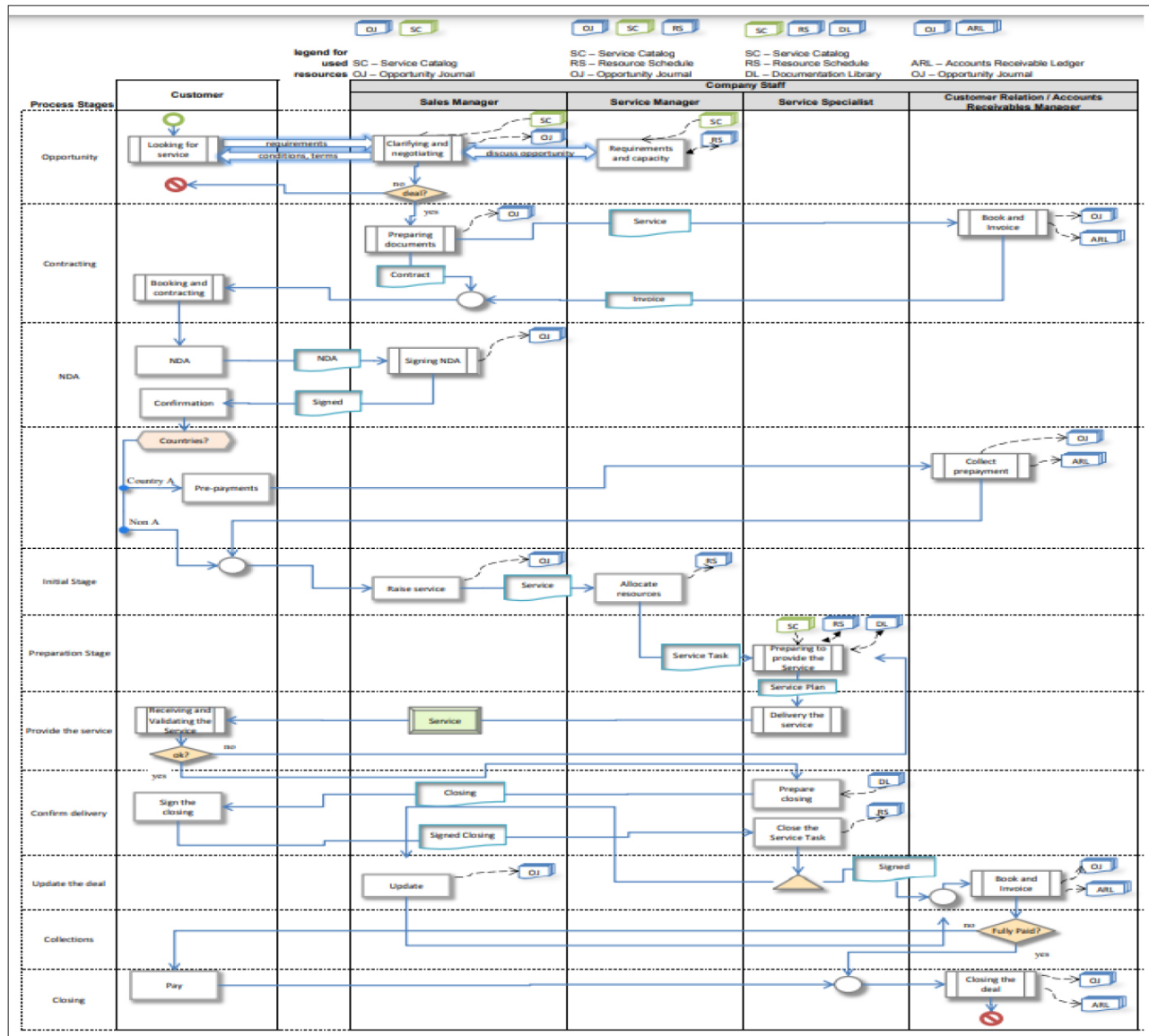
**Fig. 3.** The intermediate version of the process



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A comparison of Figure 3 with Figure 2 shows that the stages of Contracting and NDA have appeared between Opportunity and the Initial Stage. They have become part of the universal core and are executed across all countries, irrespective of local mandates.

The third step of the algorithm embeds country branches in the process for the requirements that did not enter the universal core. In the example, the mandatory advance payment for country A becomes such a branch. After contracting and an NDA, the block Collect prepayment is executed, while countries R and Z skip the block. The final hybrid version of the process is shown in Figure 4.



**Fig. 4.** The hybrid version of the process

A comparison of Figure 4 with Figure 3 shows that a conditional block titled *Countries?* has been added and routes the process flow based on the counterparty's country. Country A reaches the *Pre-payments* stage; is the control activity *Fully Paid?* within the *Collections* block. The latter, in the terminology of CBOK 4.0, indicates whether the process can continue or should be interrupted.

The embedding of variability at the information system level completes the third step. The third step is not complete until the conditional branch has been embedded in the information system, since without that support, the branch reduces to a written instruction that depends on

the employee's attentiveness. Technically, variability is embedded through four mechanisms. The first mechanism is the country attribute on the counterparty card, which automatically determines the applicability of each branch. The second mechanism is a parameterised workflow within the ERP or BPM system that conditionally displays or hides specific steps according to the country. The third mechanism is the related rule in the pricing engine that prevents service delivery from starting before the mandatory prior steps are completed, as in country A, where delivery does not start until an advance payment has been received. The fourth mechanism is a control dashboard for managers that tracks the fulfilment of country requirements in real time.

Without those mechanisms, the hybrid architecture remains declarative. With them, it becomes an operational tool for unifying processes while preserving country-specific details.

*Worked example.* A group launches a subscription product in the United States, the EU, Brazil, and Japan. Step 1 yields a base process running from acquisition to activation, billing, and support. Step 2 enrolls GDPR consent and KYC into the universal core for all countries. Step 3 introduces a country branch for Brazil that withholds withholding tax at invoicing and a flow of localised communications for Japan. Every branch is embedded in the client card's country attributes and in conditional steps within the CRM workflow. The outcome is a single process operating across four countries, with variability supported and reporting unified.

### Requirements for the Team and the Tooling

The hybrid architecture imposes heightened demands on the team and the information systems' capabilities. A shortfall in either resource degrades the architecture. A hybrid process becomes a template when the IS fails to support variability, and it becomes a versioned process when the team cannot design a single core.

For the design of hybrid processes, the team needs a defined set of roles. The lead business analyst owns the overall architecture of the group's processes, coordinates the local analysts, draws on experience with end-to-end modelling in BPMN and Safed, and works with specific matrices. The local business analysts, assigned country by country, collect and validate local specifics, understand the local regulatory and tax context, and distinguish mandatory requirements from convenient practices. The systems analysts transfer the design decisions into the IS by configuring the workflows, conditional steps, pricing engine, CPQ modules, and BPM engines. The enterprise applications architect ensures coherence across the group's IT landscape through integration patterns such as MDM, ESB, and event-driven design, as well as systems that support variability. The tax and regulatory expert, whether an internal member of staff or an external consultant, ensures the proper embedding of regulatory requirements and remains available to the team during design and when problems arise.

To support hybrid processes, the group's information systems must offer a set of capabilities. The first capability is workflow variability by country, legal entity, or another attribute, delivered at the configuration level without requiring programmatic extension of the system. The second capability is to hide from the user process steps that are irrelevant to the jurisdiction, to prevent errors and reduce cognitive load. The third capability is the attributes of the country and of related parameters at the level of the key catalogues, including counterparties, SKUs, and contracts, available for use in routing conditions. The fourth capability is a built-in pricing engine that accounts for country-specific

pricing rules, discounts, and tax surcharges. The fifth capability is the control of dashboards and reports that track the fulfilment of country requirements in the dimensions of process, country, and legal entity. The sixth capability is the audit trail, which records the selection of one branch of the process over another and the reasons for that choice, in support of subsequent internal and external reviews (Sahay et al., 2023).

When the selected IS lacks any of these capabilities, the project must plan to either enhance the system or use a complementary specialist tool, such as a stand-alone BPM system layered on top of the ERP. A "we will manage without it" decision leads to the architectural degradation described earlier.

*Worked example.* A group selects an ERP platform. Candidate 1 has a mature pricing engine, while its workflow is hard-coded, so that conditional routing by country requires programming. Candidate 2 has a configurable BPM module, while its pricing engine is simpler. Under a hybrid-architecture mandate established through Table 4, Candidate 2 is preferable, and the missing pricing-engine functionality is compensated for by a dedicated CPQ solution. The methodology requires that architectural demands on processes be counted among the priority criteria for IS selection.

### Checklist for Completing Phase 3

Readiness to complete the internationalisation programme and transition to steady-state operations is determined by six control items. The first item requires that, for every key end-to-end process of the group, the target architecture be identified and documented as templated, versioned, divided, or hybrid, with the choice justified through Table 4.

The second item requires that, for every process designed under the hybrid architecture, the three-step algorithm be executed: the base version has been developed, the matrix of local specifics has been compiled, and the country branches have been delivered. The third item requires that the process's control activities, as defined in CBOK 4.0, be identified and preserved within every country branch, and that an equivalent alternative be in place for any country where the original control activity does not apply.

The fourth item requires that every designed process be embedded in the information systems, with variability delivered at the configuration level, irrelevant steps hidden from users in the respective jurisdictions, and key controls embedded in the workflow. The fifth item requires that a process-support team be in place, with explicit role assignments including a lead business analyst, local analysts, systems analysts, an architect, and a regulatory expert, and that procedures for amending processes be defined.

The sixth item requires that recurring monitoring of process execution be operational, in that dashboards show the distribution of cases across countries and branches, that

deviations from target indicators are recorded and analysed, and that changes in local regulation are reflected in the country branches without delay.

*Worked example.* At the close of Phase 3, the team finds that, for one of the countries, a conditional branch of the sales process has not been embedded in the ERP and is delivered through a written instruction issued to local managers. The methodology requires that Phase 3 be treated as incomplete until variability is embedded in the system, since, when staff change or volumes grow, a written instruction becomes the first source of errors and the cost of fixing those errors far exceeds the cost of timely embedding.

## CONCLUSION

This guide proposes a structured approach to building a unified system of accounting, master data, and business processes within an international company. The principal result is the substantiation of the proposition that the task of unification calls for the passage through three sequential phases, with the artefacts of each phase serving as a necessary foundation for the next.

The first phase addresses the unification and consolidation of financial data. Its outcome is reliable consolidated reporting for the group, supported by aligned accounting policies, documented rules for the chart-of-accounts transformation, and rules for multi-currency consolidation. The phase does not require migrating to a single ERP and is therefore achievable within projects of any scale.

The second phase addresses the unification of reference and parametric data. Its outcome is centrally managed master data, with support for local requirements, and an architectural decision on a single IS versus localised software for every legal entity, based on a single set of criteria. Without that outcome, the design of end-to-end processes is unattainable.

The third phase addresses the unification of business processes. Its outcome is an end-to-end set of processes embedded in the information systems, implemented under one of four architectures: templated, versioned, divided, or hybrid. For hybrid processes, the three-step algorithm applies, combining the formation of a universal core, the collection of local specifics, and the design of country branches, with mandatory embedding in the IS.

The scientific significance rests on the three authors' results. The first result is the three-phase model as a mandatory sequence of work. The second result is the four-variant classification of process architectures. The third result is the three-step algorithm for constructing a hybrid process. The first result fixes the project-management frame. The second result delivers a tool for architectural choice. The third result formulates an operational design procedure.

The practical significance lies in the applicability of the methodology to real projects without additional adaptation,

since every phase includes a readiness checklist, every section includes a worked example, and every architectural decision includes selection criteria and summary tables. The guide can therefore serve both as the framing document for an internationalisation programme and as a reference handbook for business analysts and architects.

Because multi-country ERP projects differ in scale, industry, and the maturity of the group at the start, a direct quantitative comparison of the effects of applying the methodology across projects yields limited insight. The guide proposes a qualitative assessment model that systematises the categories of economic effects that can be measured within a specific project. The model rests on the contrast between two scenarios. The first scenario is the delivery of the internationalisation programme without the methodology and serves as the baseline. The second scenario is the delivery of the same programme with the methodology. The difference between the scenarios across the categories constitutes the effect to be assessed (Panorama Consulting Group, 2024).

A systematisation of observations of multinational ERP programmes yields four classes of economic effect amenable to assessment.

The first class is the reduction of losses from project failure or substantive delay. In the baseline scenario, the parallel launch of finance, master data, and process work leads to a return to earlier stages when divergences in accounting policies or mismatches in charts of accounts emerge. The cost of the return manifests as budget overruns, foregone revenue from delayed entry into new markets, and the payroll of idle team resources. The application of the three-phase model rules out a parallel launch and the associated returns, and the effect is assessed as the difference between the planned and actual timelines and budgets within the baseline scenario, by analogy with indicators of ERP project failure in industry surveys.

The second class is the reduction of the cost of subsequent enhancements and integrations. Without an agreed master data model, integrating a new legal entity into the group requires a bespoke ETL pipeline, catalogue mapping, and consolidation adjustments for each case. The application of the methodology yields reusable artefacts, including transformation matrices, a unified MDM, and configurable workflows. The effect is assessed as the difference in expected labour required to connect the next legal entity between the two scenarios, and the indicator tends to grow non-linearly with the number of entities under the baseline scenario and linearly under the methodology.

The third class is the reduction of the cost of support and training. Versioned processes, the second architecture in Table 4, require parallel support of several end-to-end variants and the duplication of training materials. The hybrid architecture, with a single core and country branches,

reduces that load to a single set of training materials and a single internal regulation with conditional sections. The effect is assessed as the difference in headcount and support team costs between the two scenarios, and as the difference in the adaptation time for a new employee transferring between countries.

The fourth class is the reduction of regulatory risk and penalties. Local regulatory requirements, such as the Accountancy Act of Bulgaria, e-invoicing requirements in Latin America, GST invoices in India, and withholding taxes on cross-border payments, can result in fines and tax assessments when executed in error. The embedding of variability at the IS level and the embedding of control activities described in section 3.2 move these risks out of the category in which they hinge on employee attentiveness and into the category in which they cannot occur without the system step being executed. The effect is assessed as the expected value of regulatory fines and assessments in the baseline scenario, computed from historical frequencies and average amounts, minus the residual risk under the methodology.

The application of the four-class model to a specific project calls for setting the baseline indicators before the internationalisation programme begins and for periodic comparisons of the actual indicators with the baseline, for example, at an annual cadence. The model is qualitative and indicative by design, and an accurate quantitative assessment becomes feasible only in the conditions of a specific project and only when data on previously delivered programmes of a comparable nature within the group are available. Further empirical research into the methodology, based on comparing indicators from real projects before and after its application, constitutes a stand-alone research task and is identified below as one of the directions for developing the work.

The methodology has been developed for groups that operate across several jurisdictions through a network of legal entities. The methodology is unsuited to other forms of international activity, such as direct exporting without a local legal entity, offshore development without an operational presence, and one-off cross-border transactions. For such forms, individual elements of the methodology can apply, although the three-phase structure as a whole does not.

The methodology rests on the assumption that the group possesses a unified governance structure capable of making decisions that bind all legal entities and of disseminating them. For loosely coupled conglomerates, the methodology's application is constrained.

Four directions for the guide's development can be identified. The first direction is empirical research into the economic effect of applying the methodology. A systematic comparison of timelines, budgets, regulatory incidents, and support costs across projects before and after adopting the three-phase

model would enable the qualitative assessment outlined above to yield quantitative findings and establish industry benchmarks. The second direction is the formalisation of maturity-assessment instruments for each phase, which would support the quantitative comparison of the group's state before and after the application of the methodology, as well as comparisons between groups. The third direction is the broadening of applicability beyond ERP projects to CRM, HR, and supply chain management. The fourth direction is the integration with process mining to automate the extraction of factual process-execution variants from IS logs (Rott et al., 2024).

## REFERENCES

1. Accountancy Act (Bulgaria), Accountancy Act of the Republic of Bulgaria (2024). [https://www.minfin.bg/upload/45190/Accountancy\\_Act.pdf](https://www.minfin.bg/upload/45190/Accountancy_Act.pdf)
2. Ali, S., Lashari, M. H., & Jaffari, A. R. (2021). Factors influencing master data quality: A systematic review. *International Journal of Advanced Computer Science and Applications*, 12(2), 181–195. <https://doi.org/10.14569/IJACSA.2021.0120224>
3. Bal, A. (2024, August 18). Navigating VAT compliance for digital services in Latin America. *Forbes*. <https://www.vatupdate.com/2024/08/20/navigating-vat-compliance-for-digital-services-in-latin-america/>
4. Benedict, T., Kirchmer, M., Scarsig, M., Frantz, P., Saxena, R., Morris, D., & Hilty, J. (2019). *BPM CBOK version 4.0: Guide to the business process management common body of knowledge*. ABPMP International.
5. Butarbutar, Z. T., Handayani, P. W., Suryono, R. R., & Wibowo, W. S. (2023). Systematic literature review of critical success factors on enterprise resource planning post implementation. *Cogent Business & Management*, 10(3), Article 2264001. <https://doi.org/10.1080/23311975.2023.2264001>
6. Cao, B., Jin, Y., Ulutaş, A., Topal, A., Stević, Ž., Karabasevic, D., & Sava, C. (2024). A new integrated rough multi-criteria decision-making model for enterprise resource planning software selection. *PeerJ Computer Science*, 10, e2096. <https://doi.org/10.7717/peerj-cs.2096>
7. U.S. Department of Commerce, International Trade Administration. (2024). *China country commercial guide: Labeling/marketing requirements*. <https://www.trade.gov/knowledge-product/china-labelingmarketing-requirements>
8. Commercial Act (Targovski zakon), Article 7(3) (Bulgaria), Targovski zakon (Commercial Act), Art. 7(3), Bulgaria, SG No. 48/1991, as amended (1991). <https://www.bulgaria-commercial-law.bg/commerce-act.html>
9. Del Giovane, C., Ferencz, J., & López González, J. (2023). *The nature, evolution and potential implications of*



- data localisation measures* (Report No. OECD Trade Policy Papers, No. 278). OECD Publishing. <https://doi.org/10.1787/179f718a-en>
10. Ebirim, G. U., Unigwe, I. F., Asuzu, O. F., Odonkor, B., Oshioste, E. E., & Okoli, U. I. (2024). A critical review of ERP systems implementation in multinational corporations: Trends, challenges, and future directions. *International Journal of Management & Entrepreneurship Research*, 6(2), 281–295. <https://doi.org/10.51594/ijmer.v6i2.770>
  11. Emuebie, E., Ogundeyi, A., Fakuade, O., & Tunji-Shiyanbola, T. (2022). IAS 21 – The effects of changes in foreign exchange rates: Matters arising. *International Journal of Accounting, Finance and Risk Management*, 7(3), 92–98. <https://doi.org/10.11648/j.ijafrm.20220703.11>
  12. Hossfeld, C. (2025). Important features of capital maintenance in Germany. *Accounting, Economics, and Law: A Convivium*, 15(s1), s247–s269. <https://doi.org/10.1515/acl-2024-0021>
  13. Jurewicz, A. (2024). Three decades of accounting regulations in Poland: Evolution and future perspectives. *European Research Studies Journal*, XXVII(Special A), 416–428. <https://ersj.eu/journal/3701/download/Three+Decades+of+Accounting+Regulations+in+Poland+Evolution+and+Future+Perspectives.pdf>
  14. Mandrescu, D. (2022). Abusive pricing practices by online platforms: A framework review of Article 102 TFEU for future cases. *Journal of Antitrust Enforcement*, 10(3), 469–517. <https://doi.org/10.1093/jaenfo/jnac001>
  15. Monson, F. K. S., & Kawa, M. S. (2025). A critical review of US GAAP and IFRS: Future research directions. *International Journal of Management, Accounting and Economics*, 12(4), 683–704. <https://doi.org/10.5281/zenodo.15492968>
  16. Morini, C., Pieri Leonardo, F., Chaudhary, V., & Hintsä, J. (2024). A paradigm shift in cross-border e-commerce regulatory compliance: Evidence from Brazil. *World Customs Journal*, 18(2), 3–19. <https://doi.org/10.55596/001c.123504>
  17. World Customs Organization. (n.d.). Nomenclature overview. <https://www.wcoomd.org/en/topics/nomenclature/overview.aspx>
  18. Park, H. J., Yu, G.-C., & Han, Y. J. (2024). Exploring the configuration of international HRM strategies for global integration and local responsiveness in MNEs. *The International Journal of Human Resource Management*, 35(11), 1943–1969. <https://doi.org/10.1080/09585192.2024.2320768>
  19. Plan comptable général (règlement ANC n° 2014-03, version 2026), Règlement ANC n° 2014-03 (2026). <https://www.anc.gouv.fr/normes-comptables-francaises/recueils-des-normes-comptables>
  20. Rott, J., Böhm, M., & Krcmar, H. (2024). Laying the ground for future cross-organizational process mining research and application: A literature review. *Business Process Management Journal*, 30(8), 144–206. <https://doi.org/10.1108/BPMJ-04-2023-0296>
  21. Rule 48: Manner of issuing invoice (Central Goods and Services Tax Rules, 2017), CGST Rules, 2017, Rule 48 (2017). [https://taxinformation.cbic.gov.in/content/html/tax\\_repository/gst/rules/cgst\\_rules/active/chapter6/rule48\\_v1.00.html](https://taxinformation.cbic.gov.in/content/html/tax_repository/gst/rules/cgst_rules/active/chapter6/rule48_v1.00.html)
  22. Sahay, A., Di Ruscio, D., Iovino, L., & Pierantonio, A. (2023). Analyzing business process management capabilities of low-code development platforms. *Software: Practice and Experience*, 53(4), 1036–1060. <https://doi.org/10.1002/spe.3177>
  23. Salotti, B. M. (2024). IFRS 18 – a nova norma de apresentação das demonstrações financeiras: Principais mudanças, implicações práticas e oportunidades de pesquisa. *Revista de Educação e Pesquisa em Contabilidade (REPeC)*, 18(3), 427–436. <https://doi.org/10.17524/repec.v18i3.3583>
  24. Panorama Consulting Group. (2024). *The 2024 ERP report*. <https://www.panorama-consulting.com/resource-center/erp-report-archives/>