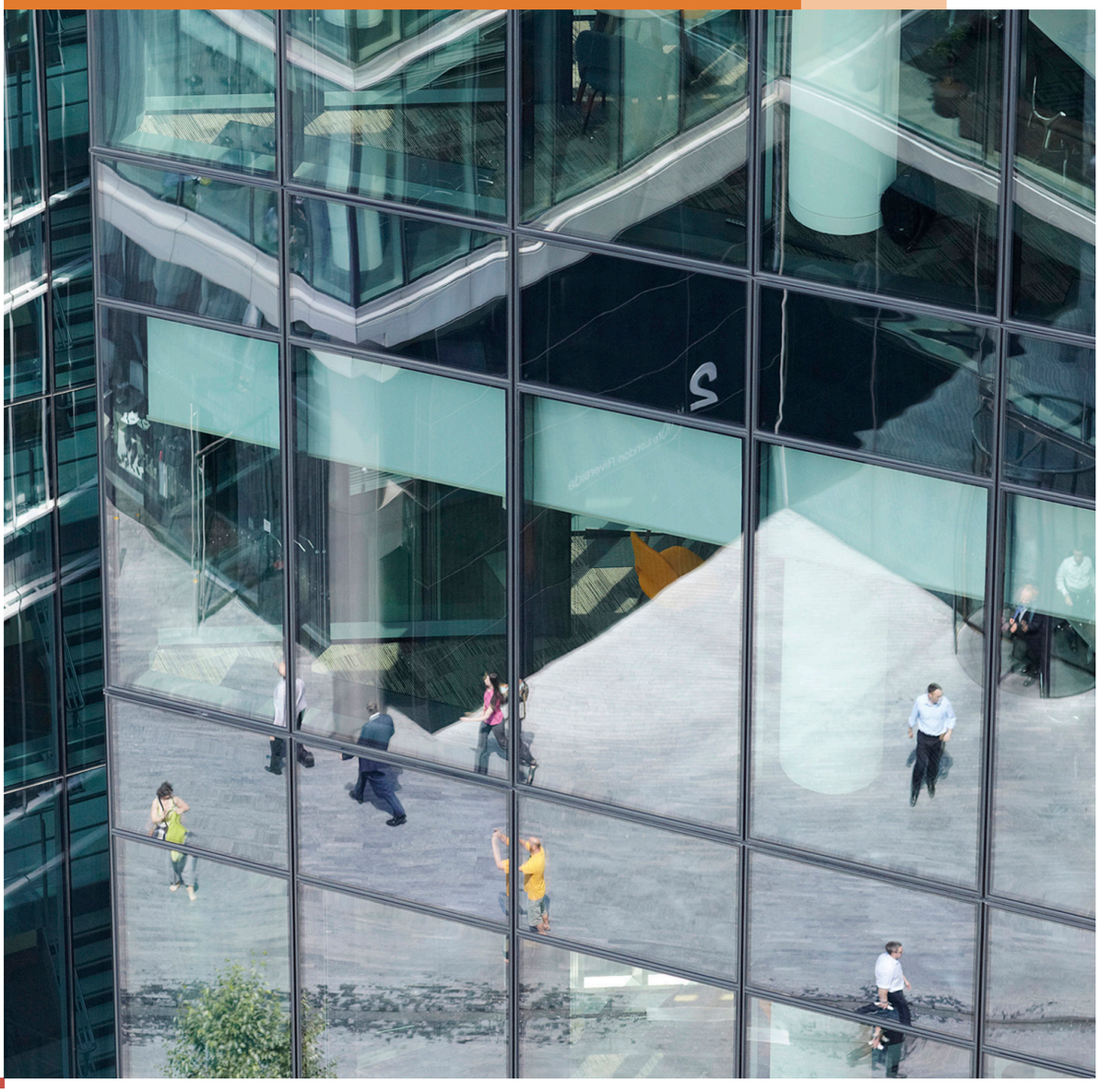
The Goldilocks syndrome: Tailoring packaged software so it's just right

Are you doing too much, or too little, when tailoring commercial off-the-shelf and cloud software?



pwc

Commercial off-the-shelf (COTS) and cloud applications can help financial institutions meet today's business demands—but managing strategic customization and functional configuration is the key to success.

During discussions with financial services clients about their planned or upcoming new system implementations, we often hear them express concerns such as the following:

Figure 1

These concerns reflect a common challenge we encounter when working with clients to implement COTS and cloud solutions: How to customize and/or configure the functionality of their software so that it's easy to maintain and delivers the desired business results.

Increasingly, many segments of the financial services industry are turning to COTS and cloud software solutions to help meet growing regulatory requirements, relentless productivity pressures, and increasingly complex customer engagement models. These solutions range from sector-specific core banking, leasing, and insurance software to more foundational enterprise resource planning (ERP) systems.

Meeting the challenges of customization and functional configuration

To extract the greatest value from COTS applications, most cases require customization. Cloud applications are typically configuration-only, but traditional customization options may be available depending on the platform and business need. In our experience, many financial institutions struggle to identify what and how much to customize. Some institutions customize too much, which leads to bloated solutions that are expensive to maintain and upgrade—and negates the cost and efficiency benefits of buying a COTS or cloud solution. Others don't customize enough, so their solutions are too generic to meet their business requirements. They should modify their business processes to "force fit" them to the software, or address an endless stream of change requests once the solution is installed.

Neither approach is satisfactory.

Why is customization such a challenge? In PwC's experience, the reason is that many financial institutions lack a disciplined, analytical approach to the task. Instead, too often they rely on past business experience, instinct, or emotion to determine how to modify a COTS or cloud application.

Configuring software presents its own set of challenges. In recent years, both COTS and cloud software vendors have expanded their configuration capabilities beyond the core system set-ups, in response to their customers' call for more flexible applications. Many solutions now include functional configuration capabilities as well. These capabilities include sophisticated rules engines, decision algorithms, and workflows that can add or modify features and functions in the application. However, companies should be careful not to implement too much functional configuration, as this can result in complexity, which increases the time and cost required to document, build, test, and maintain the application.

To assist financial institutions with customization and functional configuration, PwC has developed a framework for helping institutions implement COTS and cloud solutions. The framework is designed to help institutions identify which customizations and functional configurations are needed to meet high-impact business requirements that support strategic objectives, and which are not. It focuses on balancing the business impact and cost of each proposed customization and functional configuration. The goal is to implement only as much customization and functional configuration as needed to achieve strategic objectives.

By identifying the right degree of customization and the appropriate level of functional configuration, financial institutions can implement solutions that have the scalability and flexibility to respond to changing demands, and which are cost-effective to operate, maintain, and upgrade. Having a structured framework for making customization and functional configuration decisions can greatly increase the odds of achieving the appropriate implementation outcomes.

Many institutions are deploying COTS and cloud solutions, but few get customization and functional configuration right.

Financial institutions are under pressure to boost revenues and profits in a tough economic climate. Growing regulatory requirements, including the need for increased capital; uncertain capital markets; and cautious customers have created new challenges for players across the industry. To survive and thrive, institutions should bring innovative new products to market more rapidly, increase operational efficiency, and learn to do more with less.

Across the financial services industry, organizations are investing in COTS and cloud software solutions to help meet their business challenges. They are looking for robust solutions that are cost-effective to install and maintain, and easy to update in response to changing demands.

There are many sophisticated applications available to the industry, from enterprise resource planning solutions to core banking, leasing, insurance, and other software technology that support the financial, regulatory, tax, and daily operations of financial institutions. In many cases, these applications deliver the flexibility and scalability that legacy systems lack—and which the industry needs—to deal with the regulatory and market uncertainty that exists.

Based on PwC's experience in helping many clients to implement COTS and cloud solutions, effective decisions about customization and functional configuration are key factors in the overall success of implementation projects. The maturity of the software product is directly correlated with the amount of customization and functional configuration that may be required. Establishing a rigorous project governance process is critical to meeting customization and/or functional configuration goals throughout the implementation.

Common approaches to customization: too much or too little

In the majority of cases, COTS and cloud applications are not "plug and play." Most financial institutions implement some level of customization of their COTS and cloud software, which involves writing new code to meet unique business requirements. Some examples of common customizations are automation of business processes; adding workflow steps to promote business processes that are followed consistently; adding new forms to handle company-specific requirements; and customizing reports and analytics dashboards.

Based on PwC's experience, financial institutions tend to follow one of two approaches when implementing COTS and cloud solutions. One approach is to modify the software to make it conform to how the organization does business today, which typically results in extensive customization. The other approach is to adapt current business processes to the new software, which generally results in little or no customization but may leave critical functionality lacking. In our view, neither approach produces the appropriate result.

Extensive customization

Too often financial institutions purchase COTS and cloud solutions, and then dilute the cost and efficiency benefits of the software by over-customizing the applications. There are several reasons why this occurs. Organizations may customize extensively to replicate current processes (ironically, in many cases, these processes were developed to compensate for the limitations of their legacy systems). Or they may customize to enable less common and exception transactions, rather than core transactions. In some cases, they may simply fail to accept that the new solution may achieve the same end result as a legacy system, even though it may use a different method to arrive at that result.

Too much customization boosts the cost and delays the implementation of needed applications—often by many months. It's also more expensive to maintain heavily customized systems; they require more effort from the support team, and even minor enhancements can require major testing. Finally, upgrading to new software releases is costly and difficult when a system has been heavily customized. As a result, sometimes an institution simply foregoes an upgrade, even when it represents a measurable improvement over the current release. This situation has sometimes been referred to as "legacy lock."

For these reasons, many financial institutions that over-customize their COTS and cloud applications are dissatisfied with the results. Several institutions have called on PwC after they had performed extensive customization of their applications but did not realize the expected benefits. We worked with them to reverse course with the next release of the software.

Minimal or no customization

At the other end of the spectrum, some financial institutions do little or no customizing of their COTS and cloud applications. Instead, they may try to force-fit their business processes to align with the new applications—often in order to meet aggressive implementation timelines and tight budgets. This approach can backfire, as using the standard capabilities of the applications may require extensive transformation of business processes.

In the process of implementing a COTS or cloud solution with a decreased amount of customization, the organization also may lose a competitive advantage that the legacy system delivered—for instance, the capability to offer specialized services to valued clients. Finally, with too little customization, as with too much, software solutions can be difficult to maintain. Within the first year or so of deployment, the organization can find itself dealing with an excessive number of process workarounds and exceptions as well as a high volume of new customization requests.

Given these challenges, it's not surprising that many financial institutions that do little or no customizing are as disappointed with the end result as those who customize too much. What's needed is a more balanced approach.

Finding the right balance

In our view, the far ends of the customization spectrum generally do not produce the appropriate results. While many of our clients agree on this point, they find it difficult to determine where they should be positioned along the customization spectrum. Unfortunately, too often decisions regarding customization are based on past business experience, instinct, and emotion rather than analysis.

Leading institutions are taking several steps to determine the appropriate level of customization—the minimum level required to achieve their business objectives. To meet the customization challenge, these leaders do the following:

- Ensure the business sponsor/project leads understand and embrace the strategic objectives of the program. They make decisions and resolve issues that align with the program's long-term strategy rather than solving short-term issues only. These individuals serve as the primary change agents for the project.
- Implement robust processes for capturing, reviewing, and validating the comprehensive requirements needed to support business operations; clearly define project scope; and gain consensus and approval.
- Implement a rigorous software selection process that ensures business needs can be met with the product's capabilities and with minimal level of customization required to meet objectives.
- Choose project managers with experience in technology implementations who can question unnecessary customization throughout the project lifecycle. The project managers should also understand the product well enough to suggest workaround solutions, using out-of-the-box product configurations that may be acceptable to the business sponsor.
- Develop standards for customization that are designed to meet business objectives, such as customizing only the application features that drive revenues or which are needed to meet regulatory compliance. As a result, this helps avoid customization that supports unprofitable transactions or is designed simply to maintain legacy processes.
- Implement change management programs to facilitate user adoption of process changes resulting from the decision not to customize certain application features.

Functional configuration of COTS and cloud solutions

Both COTS and cloud service providers have enhanced their applications to offer functional configuration capabilities beyond the standard configurations performed during system setup. Functional configurations typically involve extensive rules, complex decision algorithms, and/or workflows. While these new capabilities are powerful, solutions with large volumes of functional configurations can prove to be as costly to implement and maintain as heavily customized ones. The key to success is to determine the minimum level of functional configuration required to meet business objectives.

Our recommendations

PwC framework for assistance in implementing COTS and cloud solutions

PwC has developed a framework for assistance in implementing COTS and cloud applications that help clients achieve the appropriate level of customization and functional configuration to meet their strategic objectives and do so cost effectively. The framework lays out a high-level approach that will help lead to a successful implementation, from software selection through the ongoing maintenance of the software solution.

A systematic approach is crucial to achieve the appropriate level of customization; help to establish a functional configuration that is not overly complicated; reduce the need for future changes to the application solution; and facilitate timely and cost-effective solution development and testing. Without a disciplined approach, solutions may become too broad or complex and the organization may experience a large number of change requests once the solution is implemented. These are two of the most common trouble spots our clients encounter.

The COTS/cloud application assessment framework can be used as a tool to complement PwC's Transform methodology, a global framework for delivering all aspects of a business transformation and system implementation.

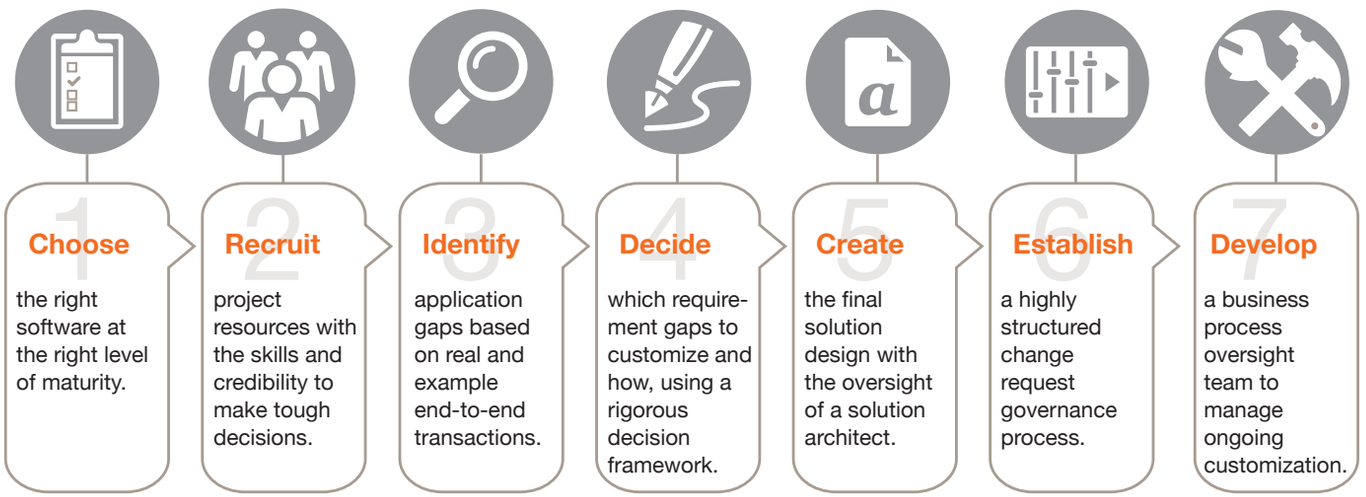
Choosing the right software

The first step in the framework is to select an appropriate COTS or cloud application. Most importantly, consider the maturity level of the product and its capabilities. Early adopters of new and/or less mature applications typically find themselves with significantly more customizations than they anticipated.

Recruiting the right implementation team

Once the software is selected, the organization establishes a project implementation team, identifying project roles and recruiting resources to fill those roles. Employees in key project roles, such as the project sponsor, project manager, and business function team leads, should be willing and able to make tough decisions related to software design that result in changes to the status quo. We

Figure 2: PwC has developed a framework for assistance with implementing COTS and cloud applications.



have seen some clients assign employees with strong skill sets to system implementation projects, but the employees were unable to make those difficult, but necessary decisions. The people considered the right resources should be able to serve as effective change agents who resolve project challenges, such as determining the appropriate approach to address requirement gaps, by utilizing capabilities within the new application.

It is critical that a key project resource—the project manager, solution architect, or functional lead—have a deep understanding of the application being implemented. If an employee with this knowledge cannot be located internally, it is strongly recommended that the organization contract with an independent third party to fill this role.

Identifying gaps in the application

One of the first tasks of the project team is to document the organization's business requirements and determine which requirements the software "as is" can meet and which can be met only by customizing the application or adding one or more functional configurations. To help to establish which requirements the application cannot meet—the "requirement gaps"—we demonstrate the software using example transactions that mimic the client's transactions and processes.

All software implementation methodologies involve documenting business requirements and identifying requirement gaps. Typical requirement templates include such information fields as description, process association, business unit/segment association, regional association, and type (such as business, report, security access, or setups). The PwC framework calls for capturing two additional information fields for business requirements: classification type and business impact.

Classifying business requirements

We ask clients to assign each documented business requirement to one of six categories we have predefined. The categories are based on the business objectives that the final solution should achieve:

- **Meet regulatory requirements:** Needed to meet a legal regulation, a US, IFRS or other GAAP standard, or a federal, state, or local tax law.
- **Gain competitive advantage via products/services:** Required to catch up with competitors or stay ahead of them.
- **Increase efficiency of processes that directly impact customer experience (sales, loan, lease, or policy negotiation and documentation; customer service; delinquency collection, etc.):** Required to enhance the customer experience.
- **Increase efficiency of internal operations (deposit, loan, lease, or policy booking; transaction processing; accounting and reporting, etc.):** Required to automate and/or improve controls in operational processes.
- **Meet contractual obligations or comply with legal agreements:** Required to meet terms in active leases, loans, insurance policies, and other legal agreements.
- **Conform with local business practices:** Required to conform to common business practices followed in a given country or region, and which differ from practices followed in the majority of countries in which a company does business.

Once business requirements are classified by type, each requirement is evaluated to determine whether the standard functionality of the COTS or cloud application can or cannot meet the requirement. Each requirement gap is then evaluated to determine whether the software should be customized or a functional configuration added to meet the requirement.

Deciding which gaps to address through customization or functional configuration

The decision of whether to customize an application to fill requirement gaps will depend on the business impact of each requirement and the cost of customizing the software to address the requirement. Similarly, the business impact and cost of implementing and maintaining functional configuration decisions should also be weighed.

Assessing business impact

The first step is to estimate, for each requirement gap, the impact on the business if the application cannot meet the requirement. We work with clients to assign a rating of "high," "medium," or "low" when estimating impact. The client defines the impact ratings, which can be general or specific. For instance, a general definition of "high impact" might be "achieves a significant efficiency gain," while a specific definition could be "improves efficiency by more than 30%."

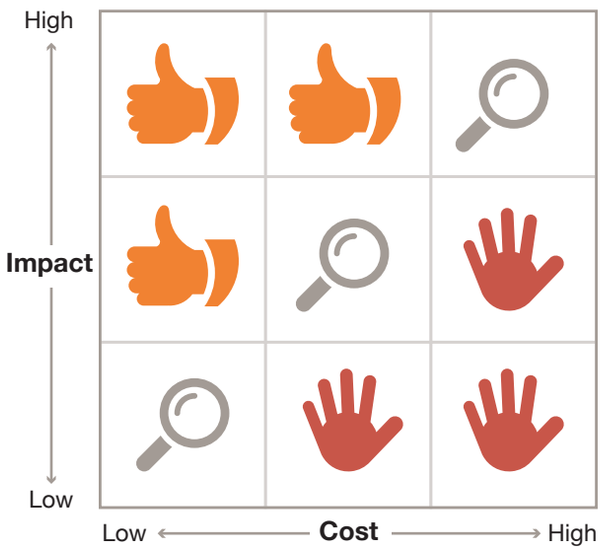
Estimating customization/configuration costs

The next step is to estimate the cost of closing each requirement gap by customizing or functionally configuring the software. The appropriate candidates for customization are features that have a high impact on the business and which can be built and maintained at a low cost (for example, a low-cost customization to create and launch a highly demanded product ahead of competitors, and thus boost revenue and market share). The least appropriate candidates are those that are expensive to build and maintain and which have a low impact on the business (e.g., a custom service for a less profitable customer segment).

Prioritizing customizations

Based on impact and cost, the potential customizations can be prioritized, with the organization assigning one of three recommendations to each, as shown in the matrix below:

Figure 3: Based on impact and cost, the potential customizations can be prioritized, with the organization assigning one of three recommendations to each.



Yes—Customization to meet the business requirement is deemed beneficial.

Review—Further analysis is required to decide whether customizing the application to meet the business requirement offers sufficient benefit to justify the cost.

No—The business impact is not sufficient to justify the cost of customization.

Creating the final design

Detailed designs of the COTS or cloud solution are documented and continually refined until the final design document is approved. We recommend that clients assign a solution architect role to assist with fitting each gap solution design within the overall solution architecture framework. This resource should be a specialist in the software product to be able to identify potential integration issues, process breaks, performance problems, and control weaknesses.

The solution architect also assesses the complexity of the functional configuration. Extensive and/or complex rule sets can hinder performance and make ongoing maintenance more difficult.

Establishing a change request process

It is essential that project governance include a change request (CR) process in the early stages of implementation, so that the project team keeps customization and functional configuration objectives a high priority and is able to manage the scope tightly during the course of the project. The project leads responsible for the CR process should be broadly experienced in the organization's business strategy and processes and open to change, so they are equipped to make the appropriate decisions on CRs.

Finally, it is a good idea to provide up to three options for addressing each change request: no customization or functional configuration, minimal, or robust. The estimated time and cost for each option should be provided, and the options ranked based on impact and cost, using the process highlighted earlier.

Developing a maintenance plan

With the steps above completed, the project team should develop a plan for ongoing monitoring and maintenance of the COTS or cloud application, to assist in meeting the targets for total cost of ownership. A business process oversight team should be established, to help to maintain a standardized process across the organization.

A structured framework for customization and functional configuration establishes a foundation for success.

Implementations of COTS and cloud applications in the financial services industry often fall short of expectations because of the failure to customize and/or include functional configurations in the applications appropriately—in many cases, due to the lack of a disciplined approach. PwC offers a structured, repeatable, and measurable process for managing customization and functional configuration of COTS and cloud solutions. Our framework is often used to implement ERP systems that support accounting and financial functions as well as daily operations (e.g., core banking and leasing operations). But the framework was designed to be robust, and it can be applied to many other large packaged or cloud applications in the financial services industry. In general, any platform that supports execution of business processes could benefit by applying the framework.

Built-in success enablers

The key elements of the framework are designed to facilitate the success of COTS and cloud software implementation projects. These include:

- A robust analytical approach to software selection and customization/functional configuration decisions that clearly demonstrates that the results are adequate for the organization.
- Project managers and leads with sufficient experience and credibility to challenge the status quo.
- Validation of the software solution using example transactions that mimic the client's transactions and processes, to properly assess those requirements not met by the standard software solution.
- A structured gap-solution design process that enables selection of a gap solution from multiple options.
- A solution architect role, whose objective is to help to fit each gap solution design within the overall solution architecture. The solution architect also assesses functional configuration complexity, including identifying rule sets that could impact performance and make it more difficult to maintain the system.
- A solid change request process for evaluating additional requests for customization and functional configuration based on business impact and cost, which decreases the potential for extensive, unnecessary customization or functional configuration once the application has been deployed.
- An ongoing business-led governance process for managing future customizations that uses the same robust decision-making approach.

The bottom line

Financial institutions that are planning to implement a COTS or cloud solution, and those in the midst of the implementation process, should do well to put a sound change management program in place and are effectively addressing the components of the PwC framework—specifically, that they are:

- Choosing the right software at the right level of maturity.
- Recruiting project resources with the right skill sets and competencies that will challenge the staus quo.
- Identifying application gaps based on real and example end-to-end transactions.
- Deciding which requirement gaps to customize and how based on a rigorous decision framework.
- Creating the final solution design with the oversight of a solution architect.
- Establishing a highly structured change request governance process.
- Developing a business process oversight team for ongoing customization control.

PwC's framework can enable financial institutions to implement off-the-shelf and cloud applications in a timely and cost-effective manner while meeting their strategic objectives. By determining the most appropriate level of customization and functional configuration, with the aid of the framework, institutions can generate a bigger return on their investments in their COTS or cloud technology solutions.

Case studies

Significantly reducing the level of customization of an enterprise resource planning (ERP) solution

The corporate finance division of a global bank wanted to upgrade its ERP financial application and discovered that roughly 90% of the business capabilities of the existing application had been customized to some extent. PwC worked with the client to establish decision criteria to assess customizations and develop a method to evaluate alternative solution options. The upgrade enabled the client to reduce its customizations from 90% to 30%.

Limiting customization of a financial ERP and governance, risk, and compliance (GRC) implementation

A global asset management firm wished to limit customization to simplify implementation. The client achieved this in two primary ways:

- It appointed a very strong project lead with the experience and credibility to push against the status quo. The project lead's ability to challenge others, when necessary, helped minimize the amount of customization to system packages.
- It used structured workshops facilitated by PwC to demonstrate the solution's functionality and its ability to meet business needs without customization. Instead, business process changes and configuration could be used to address application gaps.

Limiting customization of mortgage loan origination software solution

PwC worked with a large international financial services company to implement a new mortgage loan origination solution for its private client services line of business.

Several techniques were used during the requirements and design process to help limit customization:

- Industry standard process models were leveraged as the baseline for the future state process flows.
- Any changes to standard processes were implemented via workflow, business process management, and business rule services, all but eliminating the need for code-based customizations.
- A strong governance model and change control process were put in place to rigorously evaluate customization requests.
- A business operating model pilot was conducted toward the end of the design process. During this facilitated group session, PwC simulated the processing of different loan scenarios, enabling each business area leader to understand how the new system would function.

Decreasing customization of an insurance claims processing solution

During implementation of an insurance claims processing solution, a key project objective was decreasing customizations. To assist the client in meeting that goal, PwC incorporated the following into the project approach:

- Used configuration as an alternative to customization to implement business process changes.
- Leveraged leading industry practices for design decisions.
- Empowered project team members to make decisions around gap solutions not focused predominantly on customization.
- Followed Agile project management principles, including leveraging the concept of sprints in order to provide early demonstrations of the solution to users—and in the process, promoting acceptance of the new solution versus customizing it.

Leveraging existing functionality to decrease the need to customize

A leading global leasing company planned to deploy an ERP financial application globally to enhance its middle- and back-office functions. The plan called for phasing in the software one region at a time. For the initial deployment, the client was required to perform significant customization of the software due to the lack of product maturity. This added substantial time and cost to the solution.

For the second phase of the implementation, the client wanted to limit customization to requirements related to regulations, contractual obligations, and/or business practices followed in the region. PwC helped the client to significantly reduce the amount of customization required by demonstrating that in many cases, the results produced by the COTS application were close to, or identical to, those produced by the legacy system, even though the application used a different method to achieve the results. In these cases, customization would not be required. Applying this approach, PwC was able to help the client reduce the number of requirement gaps, and thus the need for customization to fill gaps, by almost 50%.

Replacing multiple customized financial systems with an integrated cloud and COTS solution

A leading global provider of financial technology to banks and corporations utilized more than 20 financial software systems to support its business, some of which were heavily customized. The company wished to implement a single global solution that could provide real-time analysis of revenue and costs at the customer level.

To reduce the need for customization, PwC recommended a solution that integrated a cloud sales and service application with a suite of applications covering ERP, supply chain management (SCM), and customer relationship management (CRM) functionality. This hybrid solution links the sales opportunities with the customer and the booked contract, thus enabling analysis of pipeline sales revenue against actual revenue. In addition to replacing the multiple financial systems, the solution eliminated the need for the company's data warehouse and customer hub.

The solution architect role was crucial to the project success, as it helped establish that customizations were designed to work within the integrated cloud-COTS solution.

About us

PwC serves multinational financial institutions across banking and capital markets, insurance, asset management, hedge funds, private equity, payments, and financial technology. As a result, PwC has the extensive experience needed to advise on the portfolio of business issues that affect the industry, and we apply that knowledge to our clients' individual circumstances. We help address business issues from client impact to product design, and from go-to-market strategy to human capital, across all dimensions of the organization. As a leading provider of technology services, we help our clients solve complex issues spanning IT strategy and architecture to business application and infrastructure deployment.

PwC US helps organizations and individuals create the value they're looking for. We're a member of the PwC network of firms in 157 countries with more than 184,000 people. We're committed to delivering quality in assurance, tax, and advisory services.

Gain customized access to our insights by downloading our thought leadership app: PwC's 365™ Advancing business thinking every day.

For a deeper conversation, contact:

Julien Courbe
julien.courbe@us.pwc.com
(646) 471-4771

Rex Taylor
rex.w.taylor@us.pwc.com
(646) 471-7290

Jeff Spector
jeffrey.spector@us.pwc.com
(267) 330-2645

Justin O'Connor
justin.oconnor@us.pwc.com
(415) 498-7337

Diane Jennings
diane.b.jennings@us.pwc.com
(813) 222-5414

Aditya Eswarapragada
aditya.eswarapragada@us.pwc.com
(703) 918-1436

To learn more about PwC's Financial Services Institute (FSI), please visit *www.pwc.com/fsi*

Follow us on Twitter

@pwc_us_finsrvcs

"The Goldilocks syndrome: Tailoring packaged software so it's just right," PwC, May 2014, www.pwc.com/fsi.

LA-14-0162