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BPM Patterns & Practices in Industry
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Executive Overview

Business Process Management (BPM) is an approach to aligning business strategy with execution. In this paper, we discuss common BPM adoption patterns and best-practices across different industries to illustrate the value of BPM in terms Efficiency, Visibility and Agility.

Introduction

Fundamentally, the value of BPM lies in meeting performance improvement and change management objectives.

The need for performance improvement commonly stems from a desire to improve productivity (by eliminating manual processes), process optimization (to meet or improve SLAs) and adaptability in terms of time to respond to process change arising from shifting business needs.

The need for change management commonly stems from regulation in terms of legal mandates to avoid non-compliance penalties, embrace industry standards for parity with peers and consistently enforce business rules/policies across processes spanning functional/segment silos, customer interaction channels, etc.

Below is a graphical depiction of the business imperatives for and the benefits of BPM:
Performance Improvement Use-Cases

Financial Services: Payments Straight-Through-Processing

Payments processing is a central activity for financial institutions, especially retail banks and intermediaries that provide clearing and settlement services. While automation has improved capacity of existing payments systems, the vision for Straight-Through-Processing (STP) remains unfulfilled.

Below we outline the key external and internal factors that create performance improvement bottlenecks in payments processing:

There are several approaches to realizing the STP vision for payments processing. One approach is to consolidate existing payments applications with a payments hub. Another alternative is interface consolidation with a payments gateway.

A hybrid approach is to use BPM in conjunction with the above technologies. Here, a lightweight abstract process is created to represent the end-to-end journey of payments flow across initiation, clearing and settlement. Such abstract processes could be modeled as events driven processes that are triggered / invoked by different systems as payments flow through them. By enabling a chronological view of the payments flow the BPM layer serves as the single-source for tracking payments.
Below is a graphical representation of a BPM architectural pattern for improving STP and end-to-end visibility of payments processing:

Financial institutions and intermediaries have made significant investments in payments processing. Approaches to improve STP through payment systems consolidation entail multiyear efforts, multiple skills sets, and relatively long time-frames to realizing the desired STP benefits. An alternative approach, intermediate for some, is to integrate front-office payment initiation channels, back-office ancillary systems, and external counter-party applications through a common payments pipe.

Oracle Business Process Management helps financial institutions to build shared processes that unify existing payments systems across internal and external interfaces in a timely and cost efficient manner.

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<thead>
<tr>
<th>DRIVERS</th>
<th>PROCESSES</th>
<th>VALUE</th>
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<tbody>
<tr>
<td>Improve payments tracking, exceptions handling and resolution</td>
<td>• Account Receivables • Account Payables • Purchase Orders • Invoicing • Payment Exceptions • Returns</td>
<td>Improved STP with real-time tracking, status reporting and pro-active exception management</td>
</tr>
<tr>
<td>Simplify payments governance and audit reporting</td>
<td></td>
<td>Lower Cost of Governance with aggregation of real-time payments trends to negotiate counter-party SLAs and &quot;single-source-of-truth&quot; audit trail</td>
</tr>
<tr>
<td>Improve cash flow forecasting</td>
<td></td>
<td>Working Capital Optimization with shorter days sales outstanding (DSO) and borrowing/lending at favorable rates</td>
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</table>
Communications: Dynamic Order-Orchestration

Communications Service Providers (CSPs) are faced with declining voice revenues; hyper-competition from increasing number of IP network based providers and customer demand for integrated telephony, mobile, TV and internet services. While “Triple play” or “Quadruple play” offerings have become the norm, CSPs are experiencing increasing customer churn and revenue-leakage arising from errors and delays in order management across order-capture and order-provisioning.

Below we outline the key external and internal factors that create performance improvement bottlenecks in order-orchestration:

While Service Delivery Platforms can and have unified the order flow within individual OSS, BSS and organizational silos, the frontier in customer service advantage lies in unifying order flows at the edge to deliver consistent experience to external stakeholders especially customers.

Moving to next generation services creates an opportunity to differentiate through timely and accurate provisioning of converged services. Hence CSPs need to harmonize order-cycle processes, across traditional OSS/BSS ‘silos’ and multiple business units, to deliver true on the promise of offering single-point-of-contact (SPOC) converged communication services for businesses and consumers alike.

By building a light-weight BPM layer between customer-interaction channels and OSS CRM systems as well as between BSS Order Management systems and the OSS silos (in some cases the OSS SDP layer).
Below is a graphical representation of a BPM architectural pattern for streamlining converged services delivery with dynamic order-orchestration:

Oracle Business Process Management helps communications service providers in unifying order management and drive agility across the end-to-end order-cycle to gain a customer service advantage.
Utilities: Meter-to-Cash Optimization

Meter-to-Cash is the primary revenue generating activity for down-stream utilities. Today, utilities are faced with capital intensive investments in upgrading to smart-grid/metering infrastructures and consumer-centric revenue models, e.g., net-metering and time-of-use pricing that could potentially drive down revenues as consumption shifts to off-peak periods. Hence, utilities can no longer afford to neglect efficiencies in their meter-to-cash cycle.

Below we outline the key external and internal factors that create performance improvement bottlenecks in Meter-to-Cash processes:

Below is a graphical representation of the Meter-to-Cash cycle and the impact of BPM on performance improvement in each phase of the Meter-to-Cash cycle:
Utilities have operated, conventionally, in a capital intensive, low-margin industry where there has been little impetus to strive for cost efficiencies due to the revenue ceiling imposed by regulated prices. Transitioning to smart-grid/metering infrastructure will require more capital intensive investments in both OT and IT. However, sub-optimal meter-to-cash processes will only impede efforts to reap the desired benefits of operating expense reduction in terms of cost-to-serve and maximizing customer wallet share with better demand-supply planning.

Oracle Business Process Management helps utilities to harmonize customer self-service, billing, payments and meter-data management (MDM) processes and insulate these processes from changes to OT and IT systems.

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<thead>
<tr>
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<tbody>
<tr>
<td>Roll-out “smart” e-services to consumers</td>
<td>• Account Creation</td>
<td><strong>Improved Customer Satisfaction</strong> with pro-active outage management and/or faster turnaround to user-reported outages</td>
</tr>
<tr>
<td>Manage cost of operations in delivering core utility services</td>
<td>• Field Services</td>
<td><strong>Higher Margin Efficiency</strong> with real-time or current consumption based demand forecasting, real-time pricing and lower costs of energy procurement</td>
</tr>
<tr>
<td>Lower inefficiencies in cash collection</td>
<td>• Exceptions</td>
<td><strong>Working Capital Optimization</strong> with elimination of delays in invoicing, account receivables and pro-active collections with pre-paid billing</td>
</tr>
</tbody>
</table>
Retail: Customer Experience Management

Retail 2.0 represents a trend in the retail industry triggered by the accelerated shift towards online and mobile technologies and social shopping paradigms. Never before has the consumer been of more importance, especially so due to the shrinking information asymmetry between merchants and consumers that has tilted the balance of power in the latter’s favor. Traditional multi-channel customer experience strategies segmented customers based on channel-specific purchase cycles. However, this approach is unable to cope with today’s complex purchase journey that involve touch-points across multiple channels.

Below we outline the key external and internal factors that create performance improvement bottlenecks in delivering seamless and lasting customer experiences:

- **TRENDS**
  - Online channel growth outpacing offline channel; multi-channel touch-points in consumer purchase cycle
  - Mobile channel further narrowing information asymmetry enabling real-time price and product comparison
  - Social shopping business models, e.g., F-commerce put customers in greater control of the brand

- **CHALLENGES**
  - Stove-pipe order-capture and order fulfillment systems aligned to specific channels and geographies
    - hamper cross-channel current and historical purchase context sharing
    - prevent alignment of service levels and offers to customer profitability
    - limit real-time demand visibility and pro-active inventory management

- **IMPLICATIONS**
  - Revenue Leakage from purchase abandonment due to effort of “re-building” shopping cart when switching across channels
  - Sales in-efficiency given inability to prioritize offers and service levels for profitable customers
  - Customer Churn from perceived marginalization and disjointed experience across channels

Quite honestly, customer acquisition, retention and satisfaction have been top of mind for retailers for quite some time now. The missing piece of this puzzle is bringing all those countless hours of strategy and planning to fruition. This is more of an execution gap than anything else. Although technology has made consumers more informed, more mobile and more social, customer experience is still largely defined by delivering on the following:

- Consistent experiences, whether shopping online or offline
- Personalize-able interaction
- Timely order fulfillment, if not pro-active notification of delays
Below is a graphical representation for streamlining front-end, mid-office and back-end interfaces through shared process to achieve consistency and efficiency in managing the customer experience from order capture to order provisioning:

Online, mobile and social commerce paradigms have empowered the customer to make organized and informed purchase decisions while enabling any-time any-where transactions. To attract, engage, convert and retain the new consumer merits more than just re-branding of existing multi-channel integration strategies as customer experience management. BPM can drive improvements in CLV, supply and demand management, and sales-efficiency by enabling a connected, consistent and seamless multi-channel experience.

Oracle Business Process Management helps retailers deliver customer experience management for Retail 2.0.

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<tbody>
<tr>
<td>Increase customer satisfaction by providing a connected, multi-channel experience</td>
<td>• Lead-to-Order</td>
<td>Higher Customer-Lifetime-Value with a connected customer experience across multiple channels and reduced churn rate</td>
</tr>
<tr>
<td>Improve visibility of demand and supply indicators</td>
<td>• Order-to-Cash</td>
<td>Improved Just-In-Time (JIT) pull-based inventory management and procurement with real-time view of overall demand across all channels</td>
</tr>
<tr>
<td>Align sales and marketing to lower cost-to-serve</td>
<td>• Exception handling</td>
<td>Improved Sales Efficiency with a unified RFM view of customer profitability across multiple channels</td>
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Change Management Use-Cases

Financial Services: Operational Risk Management

Financial institutions view compliance as a regulatory burden that incurs a high initial capital outlay and recurring costs. By its very nature regulation takes a prescriptive, common-for-all, approach to managing financial and non-financial risk. No longer does mere compliance with regulation lead to sustainable differentiation. Competitive advantage stems from the speed and cost efficiency at which compliance with regulatory mandates can be realized, in-line with the innovation pressures of the present economic environment.

Below we outline the key external and internal factors that create change management bottlenecks for managing operational risk:

- **Growing legislative regulations**, e.g., KYC, MiFID, Basel II
- **Regulatory overlap**, e.g., KYC (CDD) and MiFID (Investor Protection)
- **Conflict of interest**, e.g., AML verification vis-à-vis privacy

- **Proliferation of in-consistent cross-domain processes**
  - inhibits standardized risk enforcement
  - delays breach detection

- **Frequent change cycles**
  - results in accidental breaches
  - increases vulnerability to regulatory inadequacies

- **Increased Time and Cost due to duplication of effort in**
  - meeting evolving regulatory and business needs
  - periodic compliance checks

- **Delays in Audit Reporting**
  - quality issues in reconciling non-standard process KPIs
  - integrity issues with multiple data touch-points

Financial institutions considering reducing operational risk of their processes, generally speaking, have two choices:

- Rip-and-replace existing applications with new off-the-shelf applications
- Extend capabilities of existing applications by modeling their data and process interactions, with other applications or user-channels with BPM

The benefit of the first approach is that compliance with new regulatory requirements would be embedded within the boundaries of these applications. However pre-built compliance of any packaged application or custom-built application should not be mistaken as a one-shot fix for future compliance needs. The reason is that business needs and regulatory requirements inevitably out grow end-to-end capabilities of even the most comprehensive packaged or custom-built business application. Thus, processes that originally resided within the application will eventually spill outside the application boundary. It is precisely at such hand-offs between applications or between overlaying processes where vulnerabilities arise to unknown and accidental faults that potentially result in errors and lead to partial or total failure.
The gist of the above argument is that processes that reside outside application boundaries and span multiple applications constitute a latent operational risk across the end-to-end value chain. For instance, distortion of data flowing from an account-opening application to a credit-rating system if left unchecked renders compliance with Know-Your-Customer (KYC) policies void even when the KYC checklist was enforced at the time of data capture by the account-opening application.

Business needs inevitably outgrow end-to-end capabilities of both packaged and custom-built business application. Thus, processes eventually spill outside application boundaries. It is precisely at these hands-offs between applications or between overlaying processes where vulnerability to unknown and accidental faults could result in errors, eventually causing partial or total failure.

Oracle Business Process Management helps financial institutions lower the operational risk of these process gaps by enabling business-driven process change management so you can meet regulatory requirements in a timely and cost-efficient manner.
Communications: eTOM Compliance

Communications Service Providers (CSPs) are faced with declining voice revenues; hyper-competition from increasing number of IP network based providers and customer demand for integrated telephony, mobile, TV and internet services. To survive in this environment, both traditional physical network operators and virtual CSPs need to meet increasingly shrinking time windows in rolling out new services, provisioning them on time and accurately; all this while balancing the pressure of growth-oriented IT investments on margins.

Below we outline the key external and internal factors that create change management complexity in embracing standards such as eTOM:

Often, OSS/BSS transformation efforts under-perform resulting in time and budget over-runs. The issue is less so about the incapability of the IT systems or the people implementing them and more so of ignoring the process-centric view of the firm. Non-compliance to standards based ITSM frameworks to drive IT investments poorly aligned with end-to-end business priorities results in:

- Ad-hoc or silo driven IT procurement, thus limiting ability to realize vendor selection and contract negotiation benefits of firm-wide procurement
- Integration complexity of attaining end-to-end process view across non-standards based processes proliferating across multiple systems

A common approach to achieving operational efficiency in running a service provider business in the communications industry is to embrace tmforum's Business Process Framework (eTOM).

Below is a graphical representation of the Level 1 business process framework as defined in eTOM:
While parity with industry standards such as eTOM by itself does not create a differentiation in the end-user service offering, it does enable improved utilization of IT budgets and narrowing the strategy-execution gap that plagues business transformation programs.

Oracle Business Process Management helps CSPs embrace eTOM to drive operational efficiency by enforcing a process-aligned methodology to IT procurement and service delivery.
Utilities: Smart-Grid AMI Security

Today, utilities are committing to capital intensive investments in upgrading to smart-grid/metering infrastructure driven by government regulation and consumer awareness. However, in this process of becoming increasingly “smarter”, the digitization of the grid is blurring lines between operational, information and communication technologies. This inadvertently makes the grid highly vulnerable to cyber-attacks, physical sabotage and equipment malfunction in the “last-mile” i.e. Automated Metering Infrastructure (AMI).

Below we outline the key external and internal factors that create change management complexity in securing the “last-mile” of Smart-Grid infrastructure:

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<th>TRENDS</th>
<th>CHALLENGES</th>
<th>IMPLICATIONS</th>
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| Increased government mandates for smart-grid e.g. Low-carbon Network Funding | Bi-directional information flow increases likelihood of data confidentiality breaches | Revenue Loss from energy theft and erroneous billing from  
  • delayed response or failure to detect meter sabotage  
  • corruption of MDM repository resulting in under-charging for discrepancies |
| Increased vulnerability of smart-grids to cyber-attacks with convergence of OT and IT | More inter-connections in AMI increase opportunities for “denial of service” attacks | Legal Costs of penalties and settlements arising from  
  • unsolicited usage of meter data  
  • unwarranted disconnections and slow outage response |
| Drive to define standards for smart-grid security | Digitization of the last mile increases attack surface and potential for cascading failures |  |
Below is a graphical depiction of the logical architecture of AMI, although in practice capabilities of multiple components (other than meters) could be encapsulated in the same application:

Source: [http://collaborate.nist.gov](http://collaborate.nist.gov)

Clearly, there is an enormous promise in terms of energy conservation and lowering carbon footprint in the transformation of the electric grid. However the infusion of information and communication technologies into the conventional electro-mechanical grid does create unknown vulnerabilities that can bring the grid, if not society, to a halt. Securing the “last-mile”, i.e., AMI will be crucial to realizing the promise of the smart-grid future.

Oracle Business Process Management helps utilities to enforce cyber-security guidelines for key AMI processes.
Retail: ARTS Compliance

Traditional retailers are faced with declining margins, increasing shift towards online and mobile technologies and social shopping paradigms. To survive in this environment, both traditional offline retailers and e-retailers need to meet increasingly shrinking time windows in rolling out new services, provisioning them on time and accurately; all this while balancing the pressure of growth-oriented IT investments on margins.

Below we outline the key external and internal factors that create change management complexity in embracing process standards such as those defined by ARTS:

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<th>CHALLENGES</th>
<th>IMPLICATIONS</th>
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<tbody>
<tr>
<td>Online channel growth outpacing offline channel, multi-channel touch-points in consumer purchase cycle</td>
<td>Lack of a process reference models resulting in little or no process re-use and knowledge transfer across functions</td>
<td>Increased Time and Cost due to resource wastage arising from re-inventing the wheel</td>
</tr>
<tr>
<td>Mobile channel further narrowing information asymmetry enabling real-time price and product comparability</td>
<td>IT investments driven by &quot;fire-fighting&quot; or ad-hoc approach</td>
<td>Incurring mistakes and errors by ignoring experience of others</td>
</tr>
<tr>
<td>Social shopping business models e.g. F-commerce put customers in greater control of the brand</td>
<td>Error prone operations and service delivery</td>
<td>Sub-optimal Process Efficiency due to isolated view of processes, thereby</td>
</tr>
<tr>
<td></td>
<td>lack of a mechanism to implement strategy in practice</td>
<td>• ignoring process interdependencies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• resulting in lack of transparency and internal finger-pointing</td>
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The technology choices retailers make in optimizing their day-to-day operations have several implications. In the short-term, retailers incur the time and cost of defining your technology requirements, procuring the software/hardware components and getting them up and running. In the long-term, as retailers grow in operations organically or through M&A, partnerships and franchiser business models, they invariably need to make more technology investments to manage the greater complexity (scale and scope) of business operations.

Now, one would think a lot of retailers would have already gone through the pain of finding answers to these questions, so why re-invent the wheel?

Precisely so, a major effort began almost 17 years ago in the retail industry to make it less expensive and less difficult to deploy new technology in stores and at the retail enterprise level. This effort is called the Association for Retail Technology Standards (ARTS).
Below is a graphical representation of the Level 1 business process framework as defined by ARTS:

Oracle Business Process Management helps retailers embrace ARTS reference model to drive efficiency by enforcing a process-aligned methodology for developing and optimizing essential retail operations.
Conclusion

Business Process Management is a proven, practical approach for bridging the strategy-execution gap and driving business value in the following ways:

- **Efficiency** through productivity gains and reduction in operational and change costs arising from duplication of time and effort.

- **Visibility** by harmonizing concept-to-market, sales and customer service processes, thereby improving customer acquisition, wallet-share and retention.

- **Agility** by accelerating time-to-market and time-to-compliance with both industry standards and regulatory requirements.