White Paper

Roadmap for Workflow Success

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Efficiency looms largest among workflow's virtues. This starts with the ability to drive a standard, consistent process, and to drive it faster than when operated manually.

Workflow systems are ideally suited to the enablement of process improvement within IT and across the enterprise. Their virtues include efficiency, transparency, compliance, convenience, and more. Achieving those virtues requires properly targeting processes to automate, having a success strategy, and using a system that meets a clear set of requirements. It is also helpful to understand the historic pitfalls that such projects have encountered.

This whitepaper lays out an approach for successful workflow automation by exploring the virtues to be achieved, the characteristics of processes to target, the pitfalls to be avoided, and the elements of a proven success strategy. It goes on to describe the requirements for a workflow platform that supports such a successful strategy.

Together, these elements provide a roadmap to success for those charged with process improvement in today's fast moving and mobile enterprises.

Process Automation Virtues

Processes knit together an enterprise, allowing it to operate consistently and even optimally. Inconsistent processes are widely reviled for their poor results, labor intensity, and drag on morale. Thus, the allure of process automation is considerable. When applied to human-centered processes, workflow, or business process management systems (BPMS) should deliver half a dozen virtues to the process's stakeholders.

Efficiency looms largest among workflow's virtues. This starts with the ability to drive a standard, consistent process, and to drive it faster than when operated manually. An automated workflow cuts the time participants spend engaged with the process, ideally reducing their non-value-added activities to zero. This is often seen by eliminating the need for participants to update logs or shared spreadsheets, to alert them when they need to approve or weigh-in on a decision and to provide them with the information needed to do so, to automatically handle all necessary record-keeping for compliance and other purposes,and to intelligently route workflow based on dynamic input.

Process transparency is a necessary virtue for operational effectiveness, continuous improvement, and compliance. To the first point, visibility into where things stand in a process is simply essential for in-the-moment management. For instance, an Agile software development operation can only operate successfully when its key stakeholders have clear visibility into the status of sprints, backlogs, and other process elements. The faster a process moves, the more essential it becomes for stakeholders to get self-service transparency into it. Continuous improvement is a knock-on virtue of process transparency, when properly supported by the workflow system. However, continuous improvement can be impeded by process automation if the system lacks the ability to rapidly evolve or imposes more rigidity than its manual counterpart.

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Continuous improvement also requires proper insight from the workflow system, such as bottleneck reporting. A workflow system that combines proper insight with ease of adaptation is a powerful driver for continuous improvement.

Compliance does not need to impose an efficiency cost on a process when the process is properly automated. This is because well-architected workflow systems automatically create audit trails of relevant decisions, actions, and activities. Such built-in compliance reporting removes the overhead from process participants, while ensuring that an audit trail is captured contemporaneously with the actions taken. Process standards relating to Sarbanes-Oxley, HIPAA, PCI, the Model Audit rule, Reg SCI, and the FDA are all easier met this way.

Security is a virtue related to compliance, and is aided by having a workflow system control all content associated with a process. The common alternative is to use shared folders (perhaps in the cloud), shared logs or spreadsheets, or other loosely controlled repositories. Having a workflow system control access to sensitive content and process status is vastly more secure, assuming that the system is appropriately architected with unified authentication access and other enterprise-class security features.

Convenience is last, but not least, on this list of process automation virtues. An automated workflow process can and certainly should be much more convenient for its participants to access than the manual alternative. Otherwise they will revert to the manual or shadow system. The good news is that well-designed contemporary workflow systems bring the process right to participants: via alerts on their devices, allowing them to participate in workflows on their devices, eliminating the need to search for information, and giving them fingertip access to status lookups and key metrics.

Stakeholders who can reasonably look forward to less manual activity, fewer fire-drills, better visibility, and faster cycle times are likely to be enthusiastic for the benefits of the new system.

Process Targeting

Success begets success, so it's important to choose wisely when targeting processes to automate. There are several obvious characteristics that make processes candidates for workflow automation, plus other characteristics that are perhaps less obvious.

Processes that have engendered significant frustration with their stakeholders are often seen as low-hanging fruit. Indeed, they should be strongly considered simply because the flip-side of frustration is motivation for process improvement. Stakeholders who can reasonably look forward to less manual activity, fewer fire-drills, better visibility, and faster cycle times are likely to be enthusiastic for the benefits of the new system.

Beyond making stakeholders happier and improving cycle times, there are six characteristics that mark a process as suitable for workflow automation.

1. The **process should be of medium to high volume** with workflow throughput levels ranging from a few items per week up to dozens per day. Volumes below this range likely mean the process isn't top-of-mind for stakeholders—even if they are frustrated when having to engage with it. Volumes above this range are clearly central to stakeholders, albeit are perhaps best targeted subsequent to more medium volume processes in order to first demonstrate success.
2. Targeted processes **should include three or more participants**, not counting stakeholders who depend on visibility into the process. Once a process actively touches at least three people, it becomes more difficult to run efficiently and easier to have crossed-lines of communication. Thus the benefits of workflow automation become clear for the participants.
3. Ideal process **automation targets involve decision points along the way** where participants approve, reject, or reroute workflow items as they encounter them. Such intelligent routing is easily handled in an automated process, whereas it is often mishandled when the process is tracked via email and manually-updated logs.
4. The process has **time sensitive activities** such as service level agreements or time-to-market expediencies. Whenever time is a factor in a process, automation provides the ability to track when events occur, when items are passed along through the workflow, and when issues are resolved. The collection of all this time-based data allows for bottlenecks to be discovered and thresholds set to manage to required time horizons.
5. The **need to access or update other systems or logs** is another indicator of process automation need, assuming the workflow system has the ability to orchestrate those systems. These other systems can be as simple as a shared spreadsheet or as sophisticated as fetching and updating from enterprise applications, repositories, or location-based data from mobile devices. Such system integration is both labor intensive and prone to human error sans automation. But a well architected workflow solution can handle it easily, thus delivering usability, efficiency, and quality gains to the stakeholders.

6. Finally, **processes that require transparency require automation**, all the more so if they have compliance implications. It is very difficult to recreate audit trails after the fact from a non-automated process or one that uses ad hoc email as its workflow mechanism. Well-architected workflow systems automatically generate audit trails that support compliance reporting in a range of areas, from FDA, to SOX, to PCI, etc.

An easy way to remember these criteria is **DAVITS**, or **D**ecision points, **A**udit trails, **V**olume of items, **I**ntegrations, **T**ime sensitivity and **S**takeholders.

Examples that meet these criteria include many processes in and around IT, along with those that pertain to business operations.

For instance, IT processes relating to the software development lifecycle are often well suited to automation. These include issue and defect management, release management, change management, and test case management. In all cases, they tend to meet the targeting criteria just described:

- A need to reduce manual activity
- For more transparency
- For process improvement and fewer fire drills
- The need to update other systems

That list often comes from the movement of software assets into and out of repositories, and ultimately into production.

Maintaining compliance with service level objectives and service level agreements has become a critical part of day-to-day life in IT. Automated systems provide the best way of ensuring that SLO/SLA levels are not unknowingly breached. Automation can monitor such thresholds, dispatching alerts to stakeholders when remedial action is necessary, thus avoiding the consequences of an inadvertent breach.

IT processes that overlap with HR processes are another rich set to target. Those include contractor management, employee on-boarding, and off-boarding. Here the need for transparency, compliance, and system-integration (e.g., to access and identity systems) makes them ideal targets for workflow automation.

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Line-of-business and more general business operations processes are typically tackled after the above. From sales quotation approvals to administrative approvals for vacations and expense reimbursement to capital expenditure requests, the list of ripe candidates is long, especially after initial success has been achieved in earlier projects.

Historic Pitfalls

The history of workflow systems and projects is full of pitfalls to avoid. Understanding and anticipating these pitfalls is a means to avoid them.

Lack-of-fit has often been the first problem encountered, especially notable when a system designed for one area gets shoehorned into another. Such feature-requirement mismatching asks too much of stakeholders, inevitably forcing them to create workarounds to the ill-fitting system.

Poorly fitting systems have often been further undone by feature rigidity. Thus, the administrators and developers behind the system lack the ability to quickly adapt and modify it to the real needs of the process and its stakeholders needs, which inevitably evolve over time.

Workflow systems that don't seamlessly integrate with upstream, downstream, and adjacent systems are also a source of problems, since they require users to engage in sneaker-net integration. Such manual lookups, updates, and checkin-checkouts are not only laborious, but are often overlooked or not properly executed in the moment. The fallout from such insularity can be severe, including out-of-sync systems, compliance problems, and outright system failure.

Any combination of lack-of-fit, rigidity, and insularity can quickly snowball into user rejection of the workflow system. After all, why should users embrace a new system that doesn't meet their needs or forces them into laborious and error-prone workarounds?

Users aren't the only stakeholder group that often pass a judgment on a workflow system. Auditors and/or compliance officers look to such systems for audit trails and/or compliance records. A system that automates a compliance-relevant process, yet isn't auditable itself or doesn't produce an appropriate audit trail, is at risk of being deemed a controls weakness.

Success Strategy

Successful workflow implementations focus on specific applications rather than universal capabilities. An important corollary of this is that end-users might not know, and certainly shouldn't care, that the underlying system behind their issue and defect managment or IT service management system can be applied to other workflows. To continue with that example, users properly care about how well their IDM or ITSM works, judging it as they would any other enterprise application.

Another corollary is that successful implementations meet users where they are, rather than asking them to accept poorly fitting systems or those that are too generic to be quickly understood.

Thus, it is important to focus specifically on an initial workflow application based on the process targeting guidance above. Success in the initial application creates a variety of positive effects, including supportive users, cycle-time reduction, and other process improvement benefits and experienced administrators to name a few.

After this initial success, expansion to more processes becomes natural and easily supported.

Many organizations successfully use a center-of-excellence approach to the development and administration of workflow applications. Notwithstanding that, end-users typically don't recognize that a single underlying platform is being used for disparate processes, the developers and administrators can get scaling benefits by applying their knowledge of an extensible platform to multiple processes.

The platform experts in a center-of-excellence quickly become adept about repeating and reusing techniques and even process-applications from one project to another. They also become aware of off-the-shelf process-apps that are available for their use, allowing new projects to avoid reinventing capabilities that can simply be reused.

Process-applications must be enhanced over time, whether based on continuous improvement insights, new compliance rules, or other natural forces. In fact, such evolution is part of the benefit that an extensible platform provides. This assumes that the platform supports rapid development and deployment of new and enhanced applications. Thus, medium to longer-term success requires use of a system that allows for such ultra-quick evolution.

6 Keys to Workflow Success

- Succeed and Expand
- Repeat and Reuse
- Center of Excellence
- Don't Reinvent
- Meet Users Where They Are
- Ultra-quick Evolution

How must a platform support modeling, deployment, and administration of workflow apps, and how must it meet the needs of participants and stakeholders in the processes being automated?

System Requirements

Workflow system requirements fall into two groups: those pertaining to the provision of process applications and those pertaining to the usage of process-apps. In other words, how must a platform support modeling, development, deployment, and administration of workflow apps, and how must it meet the needs of participants and stakeholders in the processes being automated? Taking into account the desired virtues and success strategy described above, what follows are a set of requirements for workflow platforms. Meeting these also allows the system and its stakeholders to avoid the documented pitfalls.

Provision

End-user and process requirements are ever changing. Thus, those charged with providing workflow applications must be able to pace those evolving requirements. Therefore, it is essential that the workflow platform be architected for extreme speed in all phases of the development lifecycle, including deployment. This meta-requirement is comprised of seven subsidiary requirements.

- **Visual development and process mapping** are necessary to support lightning-fast developer productivity in general and process-owner engagement in particular. That last comes from sharing process maps with process stakeholders in order to properly capture the desired flow into the system.
- **Multi-system orchestration** is necessary because few enterprise workflows stand alone. Most must trigger updates in adjacent systems or execute look-ups or get feeds from mobile devices or other non-human data sources. This drives the requirement for the system to support the current range of web-services integration methods, e.g., REST and SOAP.
- **Application reuse** is necessary so that developers don't have to reinvent the wheel. Even better is the availability of off-the-shelf process applications. These should be usable as is and/or be easily modified. The greatest success often stems from a system that is widely used in a specific domain, such as in and around the software development lifecycle and related IT processes. Such domain success dramatically elevates the chances of deployment success for the initial targeted processes.
- Pronounced strength in a specific domain (e.g., IT SDLC) shouldn't limit a system from being applied to other domains. Given the succeed and expand principal described above, a successful workflow project tends to create demand elsewhere in the enterprise. Thus the **system should be equally usable for line-of-business processes as for IT** or other more technical processes.
- The above requirements minimize the development resources needed to create and modify process-apps, while the following requirements do the same for their deployment and administration. However achieved, **minimal development and administration** is necessary in today's lean staffing environments.

- **Instant deployment** is a fundamental requirement for the administrative side of process-app provisioning. It allows for the entire provisioning cycle to operate at the same fast pace and eliminates the need for workflow DevOps.
- Lastly, instant deployment and minimal administrative staffing shouldn't detract from the system's ability to provide auditable change management. This means that **enterprise-class change management capabilities** must be supported (e.g., rollbacks), and that every deployment action be automatically logged for audit and compliance purposes.

Active stakeholders will judge the success of the workflow system based on whether it saves them time, allows them to be more effective, and stimulates better decision-making.

Participation

The rubber meets the road when process-apps are used by participants in the processes they automate. Those who monitor or audit the process form another important class of stakeholders. These active stakeholders will judge the success of the workflow system based on whether it saves them time, allows them to be more effective, and stimulates better decision-making.

Their primary requirement is that the workflow system must fit and support the process they are executing. They will typically rebel against a force-fit that doesn't match on-the-ground process steps and characteristics. Further, they will reasonably expect that the system will stay up-to-date with their evolving requirements, as described in the Provision section above.

Beyond the need for outstanding process fit, several other requirements need to be satisfied.

Today's professionals are mobile professionals, so they expect to engage with workflow systems on their various devices. Not every function need be accessible on the smallest of those devices—phones—but every time-sensitive alert and action must be, e.g. an approval for an emergency change.

Speaking of alerts, a core capability of workflow systems is their sensitivity to time, process gates, and process thresholds. Thus, the system must support a wide range of alerts and notifications, including allowing these to be variously user-defined and process-owner defined. The richness of how these can be defined often unlocks the capability for outstanding process management.

Outstanding process management often stems from bottleneck identification, which is another important requirement in process reporting. What is slowing down the execution of processes in general? Why is a particular item held up? These questions should be answerable instantly. Such reporting is only the tip of the iceberg for the rich process and participant reporting that a workflow system must provide, but is suggestive of the analytic and process improvement power that should be expected.

Truly helpful workflow systems do more than just replace paperwork. They actually execute the work being tracked.

Another form of reporting that must be met is the provision of audit trails and other compliance reporting. Not only does this dramatically lower the cost-of-compliance, it is vastly more trustworthy since it is based on the always-on capture of process execution steps.

In similar fashion, a truly helpful workflow system enforces business, legal, and financialpolicies by disallowing actions that violate policy. Making it easier to do things the right way is a powerful incentive for proper action, while walling-off inappropriate actions is a vital guardrail against violations.

Lastly, truly helpful workflow systems do more than just replace paperwork. They actually execute the work being tracked, e.g., fetching data and/or updating adjacent systems, capturing data from mobile devices, moving digital assets into or out of repositories, etc. This requires them to orchestrate work across systems, so they can manage not just human-to-human workflows, but also human-to-system workflows.

Conclusion

Workflow success isn't a mystery. The extensive history of such projects strongly suggests the roadmap to success described above. That roadmap starts by understanding the goals for the initiative, described in this whitepaper as the virtues that workflow can deliver. It proceeds to savvy targeting of processes to automate. Just as important is to have a strategy for success and an understanding of the historic pitfalls that such initiatives have encountered.

Given that background and strategy, the requirements of any system employed become clear and are described above.

The result of using a modern workflow system that meets those requirements, along with following the strategy for success, will be processes that run better, can be continuously improved and have a low cost-of-compliance. These achievable virtues make workflow automation one of the best opportunities for IT success today.

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