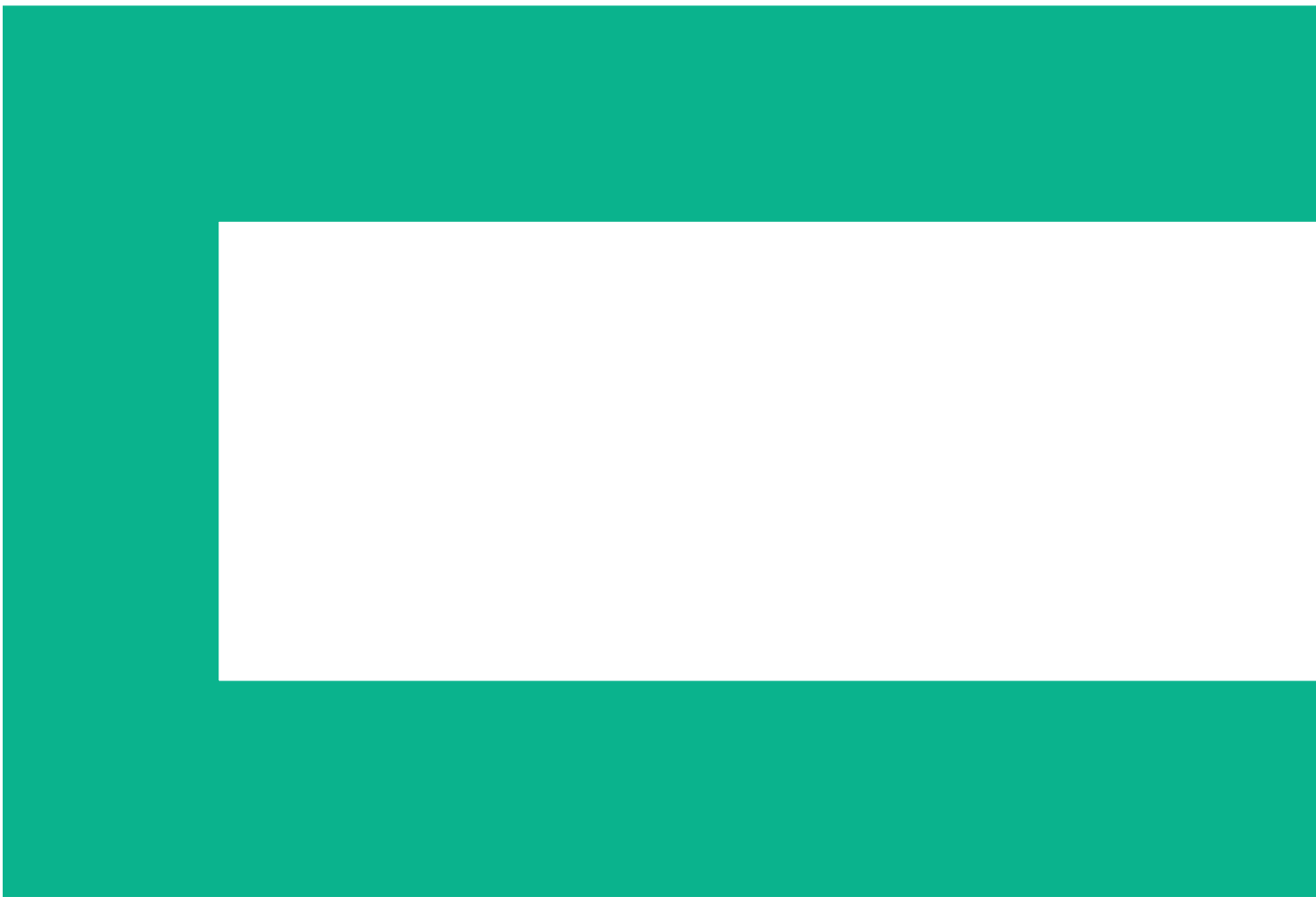
Hewlett Packard Enterprise

Business white paper

From futile to agile

How IT can become agile and avoid optimizing itself into oblivion



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Oblivion:
A state of not being aware of what is happening around you.

The pressure is on IT to become more and more agile. Optimization through automation is key to achieving agility; however, automation initiatives are far too often rolled out locally without enterprise-wide insight or awareness. The result? Systemic waste. And if this waste continues to go unchecked, IT risks automating itself right into oblivion.

The pressure is on more than ever before

Enterprise IT is increasingly under pressure from the business to become more agile. In its quest for speed and agility, IT turns to the cloud and automation. Yet, the payoff often appears questionable and the promise of seamless, end-to-end service delivery remains elusive. In fact, it seems that IT risks automating itself into oblivion—and in the process creating sprawl, wasting funds and resources, and introducing management challenges.

Lack of governance permits business silos to take a do-it-yourself approach to cloud and automation without considering the up-stream/down-stream implications. In fact, many experts predict that within the next few years "cloud speed" will pose a threat to IT organizations due to the sheer magnitude of ungoverned cloud adoption. They even go so far as to predict the disintermediation of IT and governance.

IT value streams empower IT to look at its operating model from both a business and functional perspective. Coupling these value streams with a "think big, start small" approach to automation offers IT a way out of oblivion and into the light of true agility.

Introduction

We live in a social, mobile, instant-access world. Customers and consumers demand better, faster, and more personal services. Organizations scramble to capitalize on mobile and big data to gain a competitive edge. And with its ever-growing reliance on technology, business either turns to an IT department for help, or driven by lack of IT agility, bypasses IT altogether and rolls out its own solution.

This puts the pressure on IT to increase its agility to match the pace of business by investing heavily in cloud and automation solutions. Automation is nothing new to IT; it's been around for years. So why is IT still struggling to deliver on the promise? Why can't IT just "turn it on" and be the agile service provider its stakeholders need it to be? We believe the answer lies in how IT implements automation, as can be easily seen with application delivery, where automation often takes place in silos outside the larger, end-to-end IT value chain.

Agile application delivery or systemic waste in action?

Many IT application development teams have already embraced Agile. And while it allows them to deliver code faster, it doesn't necessarily result in faster application delivery. The reason is simple: coding is just one part of the application delivery chain. So even if coding is agile, the other parts of the chain are not, resulting in waste and friction between application and operations teams. Waste, because code is created faster than it can be released into production. Friction, because application teams view operations teams as an obstacle, while operations teams believe application teams value speed above stability.

It comes down to what's been common knowledge in the manufacturing world for decades: Local optimization leads to systemic waste. The reason is simple: you're only as fast as the slowest step in the process. Optimizing any one step is futile and a waste of time, money, and resources until you optimize your biggest bottleneck. Approaches such as Kanban and the Theory of Constraints, which take this lesson into account, yield fantastic improvements in time to market and efficiency for the manufacturing industry.

Don't forget the governance

Pressed by the demands of cloud, mobility, and big data, individual business departments are taking matters into their own hands, resulting in siloed, uncoordinated, ungoverned responses. It might not be an immediate problem, but there's always a price to pay. Unregulated automation can exacerbate the very problems it was meant to fix as described in the following examples.

- Virtualization was designed, in large part, to address server sprawl. However, the ease of deploying virtual machines (VMs) without governance creates the opposite effect. Developers spin up VMs without bothering to turn them off, and resources are used but not returned to the pool, resulting in virtual server hoarding and physical and virtual sprawl.
- Almost any system administrator has an arsenal of scripts to automate repetitive tasks. But who validates these scripts? Who governs usage? Who controls changes? An enterprise IT department might have dozens of administrators writing and releasing scripts that can and do cause outages.

Of course, if governance is too rigid it stifles innovation. However, in its quest for agility, IT must remember that governance plays an important role in preventing future chaos.

Make like a manufacturer

What can IT learn from manufacturing? First, you need to reimagine IT as a series of what Hewlett Packard Enterprise calls value streams, similar to supply streams or manufacturing processes. All IT teams, irrespective of industry, serve as a production line for information services. Once this idea is internalized, you begin to see the applicability of this approach.

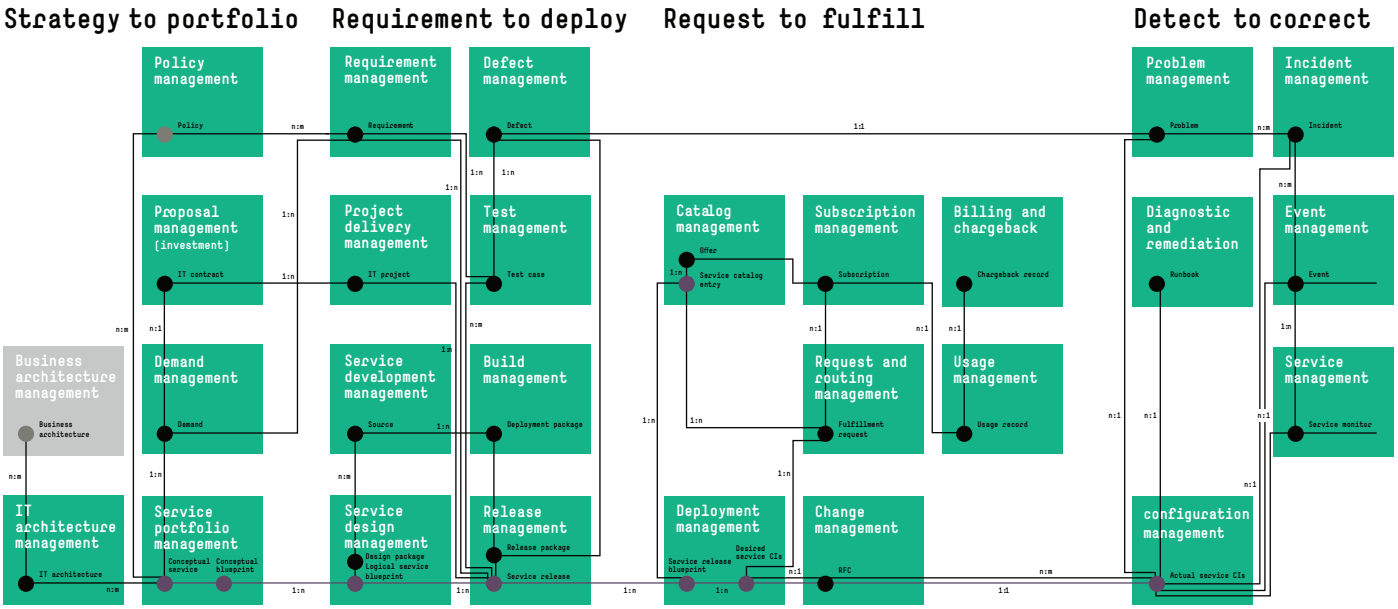
The four IT value streams as identified by HPE

Value chain 1: Strategy to portfolio—drive IT portfolio to business innovation.

Value chain 2: Requirements to deploy—build what the business wants, when it wants it.

Value chain 3: Request to fulfill—catalog, fulfill, and manage services and track usage.

Value chain 4: Detect to correct—anticipate and resolve service issues.



From schematics to specifics

At their highest level, IT value streams serve as an abstraction, allowing any IT organization to break it down into more granular components and define the inputs and outputs of each step. HPE, with the help of a customer consortium, has already defined many possible flows, artifacts, and inputs/outputs. See for example, the next-level breakdown in the strategy-to-portfolio value stream as illustrated in the “Strategy to portfolio” diagram.

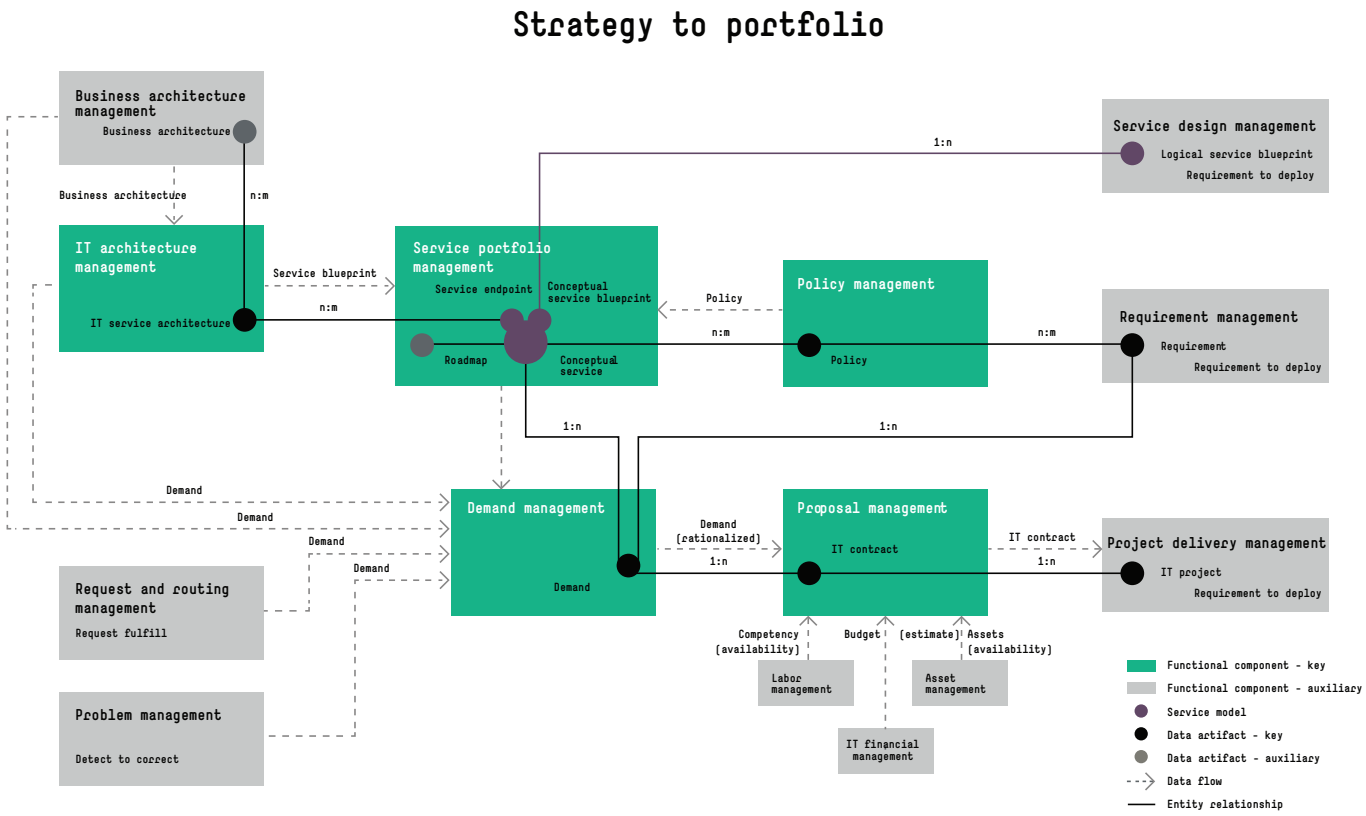
Most importantly, the IT value streams provide a much-needed technology-agnostic, business-function view of IT that helps to:

- Understand from a functional view its end-to-end value streams and how they relate to the business and each other
- Deconstruct the value streams into capabilities, functional areas, roles and responsibilities, and processes and tasks and then understand how they relate to each other
- Pinpoint and remove bottlenecks using an iterative, spiral approach

The IT value streams are also a great platform on which to anchor governance because the holistic view they provide facilitates governance and decision making, particularly in the following areas:

- Mapping roles and responsibilities to individual streams
- Determining status, progress, and success by understanding KPIs, inputs, and outputs
- Identifying and enforcing governance policies (financial, legal/compliance, security, practices)
- Identifying and consolidating multiple similar activities to take advantage of economies of scale

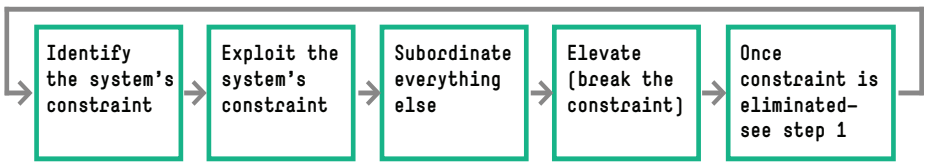
This forms the top-down, strategic part of the journey. When it comes to implementation, the approach must shift to a bottom-up one.



Think big, start small

Automating an entire value chain can be daunting. A key success factor is to adopt what HPE calls a "think big, start small" approach that focuses on providing incremental value while always keeping the big picture in mind. In an automation context, we at HPE have come to refer to this as "Automate, Orchestrate, Transform" - task automation, followed by process orchestration, leading to cloud service delivery transformation. It forms the spiral element of the value-realization approach by beginning with the low hanging fruit and progressively expanding the solution to cover more and more functions.

Once you've deconstructed your value streams, the next step is to decide where to start and how to progress. This is where adopting principles from the Theory of Constraints can help.



1. IDENTIFY the constraint
Obviously, you have to first identify the weakest chain in the link before optimizing it. As an example, our "Request-to-Fulfill" value chain might be constrained by the ability to provision infrastructure.

2. EXPLOIT the constraint
If you can eliminate a constraint immediately with little investment, do so and go back to Step 1. If not, determine how to maximize its outputs.

3. SUBORDINATE everything but the constraint
A chain is only as strong as its weakest link; similarly, we can't expect an IT system to do more than its largest constraint can handle. Creating more inputs than the constraint can manage leads to excess work-in-progress, extended lead times, and failures of priority.

4. ELEVATE the constraint
Once you are managing the system based on the identified constraint, you might find more untapped capacity in the system. But eventually demand will exceed capacity. This is where automation comes in to increase the throughput or performance of the constraint.

5. ELIMINATE the constraint
Optimizing the weakest link through automation will expose a new weakest link.

6. GO BACK to step 1 and repeat
Remember, this is a journey, not a destination.

IT value streams automated

There's often the risk that agility could trump quality. But it doesn't have to be that way. Returning to the application delivery scenario, we'll focus on the "Requirements to Deploy" chain to help alleviate testing concerns.

A typical flow might look like this:

1. Code checked in by application developer
2. Test environment provisioned
3. Code deployed on test environment
4. Tests executed and code approved for release
5. Code packaged for release
6. Code deployed into production

More often than not, in an Agile environment, the slowest step in this process is step 2. Drilling down on this step often reveals the following:

1. Send request from application team to infrastructure team
2. Provision infrastructure
3. Install all necessary software
4. Load test data
5. Make environment available

Now we can look at specific automation solutions for automating tasks and processes by asking:

- How can we use automation to provision faster?
- How can we improve response times for these requests?
- How can we tie these steps together so they execute end-to-end with minimal manual intervention?
- How do we integrate this sub-flow into the bigger chain?

Eventually, we may want to offer this as an integrated service for the application team. We are now part of the "Request to Fulfill" chain and can automate the service from request to fulfillment. We'll need to apply automation to allow users to request the service and charge them for it.

Learn more
Download the HPE eBook "Value streams: A user-centric model for the enterprise CIO."

Fight oblivion with HPE Software and Services

If you're turning to the cloud and automation to become more agile, HPE Software (HPSW) solutions can help. Whether your enterprise is fully transitioning to a cloud operating model or simply streamlining some key tasks, HPSW arms IT with the tools it needs based on proven methodologies and practices.

- Automate common tasks like provisioning and configuration for physical and virtual servers, as well as networks, storage, databases, and applications.
- Automate business processes, from compliance and workflows to change management and application deployment.
- Automate cloud delivery of infrastructure, platform, software, and development and testing services.

Making the most of automation opportunities demands that IT initiatives are aligned with business objectives. A clear IT strategy assessment and a roadmap are critical. HPE IT Transformation Consulting Services consultants have developed industry-specific frameworks and patented approach through years of working with companies to transform their IT processes.

- IT Strategy and Transformation Planning defines and delivers a complete, structured, and actionable plan for managing your IT transformation.
- IT Governance assesses the current state against industry benchmarks and best practices,
- Management of Change ensures that your organization transitions to the "new normal" and fully adopts the solution.

Value Management helps you create the benefits model to ensure consistency by ensuring objectives, planning, communication, and benefit tracking have a common structure across all business units.

Conclusion

A new road for IT

IT value streams offer IT a clear view of what's happening both upstream and downstream. In combination with a "think big, start small" approach, the progressive nature of the "Automate, Orchestrate, Transform," the iterative application of the Theory of Constraints and some proper governance, they offer IT an alternative road. A road that mitigates some of the more disruptive elements of cloud, mobility, and big data and provides IT with the agility it needs for long-term health and prosperity.

We're here to help

Wherever you are on your agile journey, HPE is ready to help with a targeted portfolio of software and service offerings.

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