



# **Lean and Six Sigma in IT**

## Applying Process Improvement Best Practices in IT Organizations

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# Lean and Six Sigma in IT

## A valuable combination

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### Introduction

Industry has always had a keen eye on process optimization. By improving production processes – making them more cost effective, raising the quality level of the output, making them faster, making them more flexible – a competitive advantage is created that allows the organization to be more successful in the market.

The methods and tools that are applied in process optimization have varied over the years. The two approaches that are in the picture nowadays stem from the Toyota Production System and Motorola respectively: Lean and Six Sigma.

An IT organization differs in many respects from a product manufacturer, however there are also quite a few similarities. KPIs such as costs, response time, flexibility and innovation are all as important to an IT organization as they are to an industrial organization. In our experience, providing a tailored approach of Lean and Six Sigma to IT organizations is a very powerful instrument to ensure that they are fit for a demanding future. In this brochure we will shed light on this from various angles.

### Our Vision: The IT organization of the future

At its core, Lean aims to reduce waste, and does so in an evolutionary way, involving all people that play a role in the business process at hand. The focus is predominantly on waiting times, error corrections, hand-over moments and rework. By identifying activities that truly add value to the customer of the IT organization (or the customer behind the customer of the IT organization), a cost-effective client-oriented process can be designed and implemented, with a constant flow.

Six Sigma is aimed at process control. It helps in stabilizing processes within the IT organization, and further improving these stabilized processes. The Six-Sigma approach is well-documented and well-known, aiming to identify the factors that have the biggest impact on the quality parameters of the process. If we know these factors, we can use these to improve the process, ensuring improvements are of a long-lasting nature. For this, statistical tools are frequently used in Six Sigma.

The methods Lean and Six Sigma are often combined into a single method “Lean Six Sigma”, which combines the “human-centered, interactive” Lean approach and the “data-based, statistical” Six Sigma approach. We have achieved great results when using these two methods in IT organizations.

### The IT Ecosystem and Lean Six Sigma

Lean Six Sigma identifies customer value and it helps in identifying and removing non-added value activities. This results in stable, result-oriented and cost-effective processes.

As industry processes cover the whole supply chain, IT processes cover the whole IT Ecosystem: the processes only run as well as the weakest link, and involving business partners in process improvement is a key element of our approach. This approach creates concrete improvement activities, not only on the drawing board, but in real life. Some concrete characteristics of the approach are:

- ▶ A lucid combination of common sense and statistical evidence in support of the decision making process.
- ▶ Deep insight in the factors that influence process performance.
- ▶ Identifying root causes for errors and delays, and coping with these.
- ▶ Improve the predictability of the performance.
- ▶ Consolidation of changes implemented, and ensuring that the IT organization continues improving itself.



1. *Process Improvement*  
 2. *Operation Management*  
 3. *Product Design*  
 4. *Inventory Management*  
 5. *Quality & Service*  
 6. *Tools & Automation*

Process

Step	Activity	Standard	Quantity
1	Design	1.5h	1
2	Build	1.5h	2
3	Test	1.5h	1

Daily Huddle

# Tasks	Training	Start date
TMA web (Screen) 2	19/09	
QA web (Screen) 2		
TMA 1		

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# Getting IT fit for purpose

## Using Lean and Six Sigma to improve Operational IT

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### The great IT irony

Against the backdrop of changing technology provision, and the multiplying demands for technology solutions from across the organization that are an inevitable consequence, the great irony is that the IT department's ability to deliver has actually been diminishing:

**Widespread austerity** measures have driven successive years of zero-based or reducing IT budgets, at a time when non-discretionary IT spend continues to rise. So the element of IT spend that can be applied to new demand has significantly reduced, leading to a 'keep the lights on' mind-set just when radical rethinking is required.

**Long investment in legacy technologies**, and a culture of well-intentioned expediency. This has resulted in core business platforms that are complex, poorly understood, costly to maintain, hard to test, and ill-suited to respond to change.

**Outsourcing** areas of IT as a way of reducing costs, improving service levels, gaining access to skills, and providing discipline and rigour has enshrined the status quo in a multi-year contractual framework. Rigid outsourcing contracts make it more difficult for technology to play new and dynamic roles in rapidly evolving business scenarios.

**Limited access to human skills** that can generate technology enabled solutions. There is now an imbalance between the volume of challenges requiring a technology response, and the number of technologists who can support that response.

**Collectively, these factors have led to a crisis of confidence in the IT function.**

### Rethinking IT

The big challenge for Operational IT is to deliver against a backdrop of continually declining IT budgets. Traditional calls to 'work smarter' or 'run faster' are not enough. We need to rethink how IT is organized and operates. Lean and Six Sigma can help to support this step-change:

#### Minimum specification

We need to be tighter on specifying value. We need to replace the practice of specifying everything we might want, with only what we absolutely need to deliver business benefit. By ruthless focus on business value we simplify the solution, save costs, reduce time to delivery, bank the benefit, and move to the next challenge. "Just enough" delivered perfectly is better than unreliable delivery of features that are not really needed.

#### Right to left planning

IT has traditionally delivered against 'left to right' plans that treat time as a variable commodity. In Lean IT the optimum approach is to agree on a delivery date that most project participants feel is 'unachievable' and then by design prune the project until it fits into the time box, eliminating waste to deliver the existing scope in an expected timeframe.

#### Transition state project planning

Analogous to the principle of continual improvement (Kaizen), this a powerful mechanism for driving pace, aligning stakeholders, and delivering significant, tangible benefits. It enables focus on relevant activities, and avoids worrying about future aspects of transformation that will be addressed in due course.

#### Silent service

Ongoing IT service failures can dominate IT attention, often at the expense of project delivery. One solution is to rigidly partition the run and change elements of the IT function. A better solution is to apply Lean and Six Sigma thinking to avoid IT service issues altogether. The aim for IT functions should be to aspire to 'silent service', where operations are largely invisible to the end user, and reliable service is simply taken for granted.

### Measuring the Performance Impact

At Atos we are obsessed by performance. Our goal is to help organizations improve the rate at which they successfully perform. This is performance improvement, as we see it. And in our view, the most fundamental requirement for performance improvement is a measurement system.

#### Performance Analytics

We have created a flexible performance capability to help our clients realize the performance opportunity for IT. We have codified our Lean IT knowledge into performance trees of drivers and measures, incorporating those into an analytics platform that includes data visualization and benchmarking, and embedded in our IT strategy consulting approach.



### Doing What We Say

The practical application of this Lean Six Sigma thinking has been proven on not just our recent client engagements (for example addressing issues on provision of ICT services in Healthcare, or improving Service Management in Financial Services) but also on our internal managed services. We "practice what we preach" or "do what we say". We are constantly challenged by our customers on demonstrating better value for money and more innovation: we depend on our skills in applying Lean Six Sigma and being able to measure the IT performance benefit to their businesses in how we successfully respond.

# 9 Barriers to the Lean IT Organization

## And how to bring them down

How is it possible that a small company with five employees can launch a completely new campaign website faster than it takes the a large multinational IT organization to plan an initial meeting to discuss the idea of a potential new campaign site?

Why do large IT organizations miss the agility to develop at the same speed?

The root cause can be found in factors that block progress, in congestion and in barriers to innovation. This congestion is caused by a lack of agility in an IT organization. An organization that is not agile will have piles of work-in-progress in various places in the organization. These piles of work prevent the organization from reacting rapidly to changing conditions.

### The congested organization

In the past, it was easy to recognize a congested organization. Big stacks of paper files were a clear sign of an organization out of control.

Nowadays it is different, as a result of the clean desk policy that comes with flexible workspaces, offices are as clean as empty hotel rooms.

But if you look further, you see a different picture. The whole organization is stuffed with work-in-progress. This work-in-progress does not display itself in the form of piles of paperwork, but is disguised as e-mails in overloaded mailboxes ("your mailbox is over its 500 MB size limit"). On shared drives you will find action lists with actions that have been "in progress" since the Middle Ages and some change requests will celebrate their second anniversary shortly. Agendas are overloaded to the point where it becomes impossible to convert the actions agreed into real deeds.

The project portfolio contains projects that should have been stopped a long time ago, but nobody dares to pull the plug. The SharePoint sites contain thousand of documents that "somebody" should have a look at. Gaps are not filled in, because some approvals are not given and not followed up.

### Drag anchors are everywhere

It is no surprise that the power of flexibility and innovation has disappeared from such an organization. If people have some time left, they will use it to update their mailbox. They will get rid of 20 e-mails in their inbox, by sending out 40 e-mails that will end up in somebody else's mailbox.

The organization is full of drag anchors, cases and files that never stop and that keep asking for attention. No wonder that a fresh question from the client that requires some time, thinking and innovation, is answered with "excuse me, I really don't have time for that".

### How to bring the barriers down

Derived from the Lean methodology, the following steps have proven to be extremely valuable:

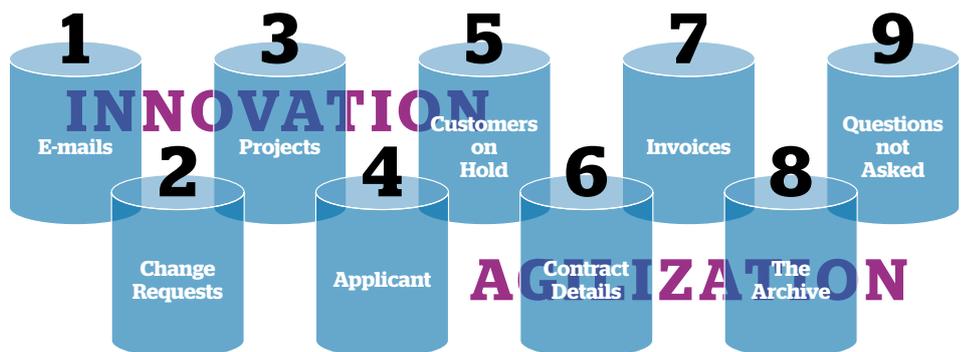
- ▶ Make the Barriers explicit, apply "visual management".
- ▶ Decide on the Ambition.
- ▶ Do a one-time "spring-cleaning" activity: get rid of old projects that will never come to an end, change requests that will never be implemented and invoices that can be resolved by simply paying them.
- ▶ Then start the improvement cycle the agile way. Start a Zero-Email program. Develop an agile way of working, create a flow dashboard and rationalize the IT application landscape. Above all: ensure that the end-user is at all times visible to the whole of the IT department.

### The 9 Barriers

In many organizations we see:

1. Overloaded mailboxes
2. Aging change requests
3. Endless projects
4. No progress on fulfilling vacancies
5. Customers waiting for response
6. Endless discussions on contracts
7. Endless discussions on invoice allocations
8. Total chaos in the knowledge management system
9. A hidden mountain of improvement suggestions that nobody knows where to submit them

Figure 1: The 9 biggest piles of work preventing the IT organization to be Agile



# Six Sigma in IT Service Desk operations

## Case: Optimizing a call handling process with statistical data analysis

The IT Service Desk is often seen as a cost center. For this reason, efforts to bring down the operational costs are very common. Agents' salaries account for about 90% of the total Service Desk costs, therefore reducing those costs seems in the first instance beneficial. However, it is often not taken into account that those apparent cost reductions have undesirable side effects for the business end-user (the actual customers of the Service Desk). Common side effects are high costs for the business end-user due to idle time of employees, waste by creating workarounds and last but not least a lot of frustration. Thus, IT Service Desk improvements should focus on how the service is organized.

An advantage for an Atos process improvement specialist who faces such client challenges is that a Service Desk is almost always supported with a ticketing system. The data available in those systems offers opportunities for data analysis to find clues about ways to improve the performance of an IT Service Desk.

In this article we will take you through a Six Sigma case study at an IT Service Desk which delivered cost savings of more than 250K Euro per year. This particular IT Service Desk based in Bangalore provides IT 24/7 first line support to 70,000 employees in a multinational organization.

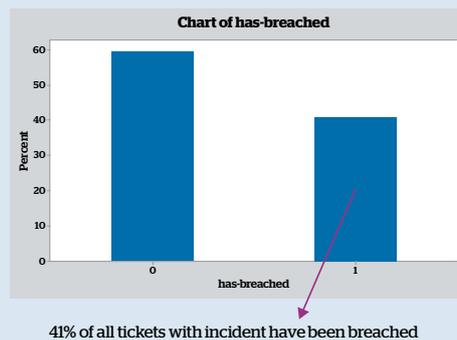
### A major part of P4 tickets breach

The Service Desk has SLAs for four different priority levels of tickets: from "Critical" (P1) to "Important" (P4). The majority of tickets are P4 and have been entered through a web portal. For these tickets the business end-user is seriously hindered in doing his or her daily work. Figure 2 provides the overall journey of a web portal ticket. Roughly two scenarios are possible.

Firstly, the 1<sup>st</sup> line agent is able to resolve the ticket immediately. Secondly, the ticket needs further investigation by a 2<sup>nd</sup> level agent and an incident is created. In the default scenario, the 2<sup>nd</sup> line specialized agent is able to fix the incident within the End-to-End SLA of 40 service hours (in case of a P4 ticket).

Currently, it turns out that 41% of the P4 tickets that enter through a web form and require 2<sup>nd</sup> line support (the second process), breach the SLA agreements. See Figure 3 below.

Figure 3: Bar-chart for SLA breach



### Different views on the cause

Different stories for the large number of breached tickets go around the organization. The 1<sup>st</sup> line agents point to the 2<sup>nd</sup> line agents stating the tickets are not handled fast enough. On the other hand, the 2<sup>nd</sup> line agents point to the 1<sup>st</sup> line agents stating they wait too long before forwarding the ticket to the 2<sup>nd</sup> line, so it is impossible to comply with the SLA.

Data analytics with Minitab software provided valuable insight into the facts behind the stories. A significant statistical relation has been found

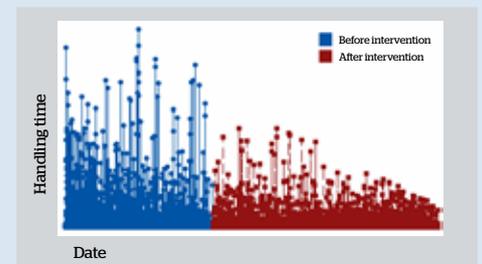
between the 'Web response time' (the time the 1<sup>st</sup> line agent needs to pick-up the ticket) and the probability the ticket breached the SLA during 2<sup>nd</sup> line treatment (see Minitab analysis in Figure 5).

### Process improvements

Based on these insights the process is improved by assigning dedicated agents who handle web tickets, without getting distracted by phone calls or other activities. We expect that this will increase the web response time and therefore decrease the probability that this ticket will exceed the SLA.

Five weeks after the intervention the handling time of the tickets is measured again and a significant decrease in handling time has been identified. The scatterplot (Figure 4) clearly shows this difference with blue showing before and red showing after the intervention.

Figure 4: Time Series Plot of Handling Time



### Conclusions

This case of a Six Sigma process improvement at an IT Service Desk shows that this method can be valuable in defining process improvements in an IT environment and in measuring the actual results.

Figure 2: The high-level ticketing process and accompanying SLAs

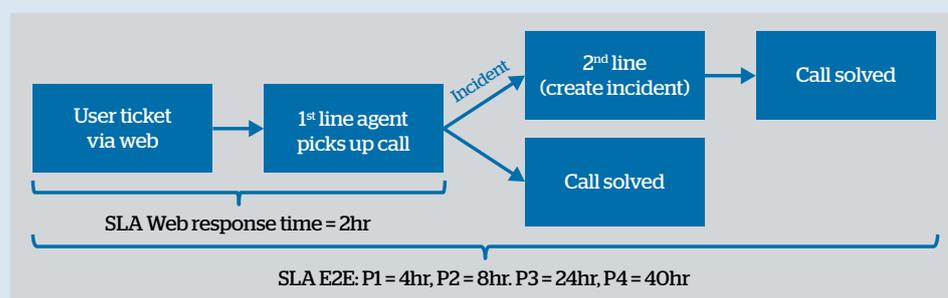


Figure 5: Minitab analysis

Response Information			
Variable	Value	Count	
has_breached	1	3447	(Event)
	0	13626	
Total		17073	

Deviance Table					
Source	DF	Adj Dev	Adj Mean	Chi-Square	P-Value
Regression	1	1010	1009.66	1009.66	0.000
Business duration of web respon	1	1010	1009.66	1009.66	0.000
Error	17071	16167	0.95		
Total	17072	17176			

# Lean IT Project Management

## Viewing your project portfolio as a car factory

An IT project manager will apply general project management principles to structure his or her project. However, when it comes to executing the project this same project manager will argue that this particular project is unique and that it is not possible to apply industry principles to improve project execution.

We argue that Lean principles from a (car) factory can be applied very effectively to an IT project portfolio. We have proven this in practice!

An important Lean principle with direct application to the IT project portfolio is "Heijunka" or levelling. An efficient car assembly line has a steady flow as it mixes the build sequence according to work content - for example high spec car followed by a low spec car etcetera. In an IT project portfolio the IT operation needs to be able to handle both the routine tasks and the complex projects. Heijunka principles can help the project workflow. Of course it is never possible to get perfect levelling (even in a car factory!) and this is one of the main causes of waste. The challenge is to be able to see waste. Once identified it can be easy to address. To assist being able to see waste, Lean practitioners categorize seven types of waste which can be identified in an IT project organization, see table 1.

Other Lean measures:

- ▶ Stop projects and programs that do not have enough added value (any more).
- ▶ Ensure that all projects and programs are monitored on strategic level.
- ▶ Ensure that you always have a complete and transparent picture of the whole project portfolio.

But above all Time = Money! All work in progress is potentially waste. All factors that hinder a project from progressing should be eliminated. Projects should not only be initiated on the basis of a business case, the IT organization must also be able to handle the project with the capacity available. A way to prevent sub-optimization of project capacity is to centrally organize the resource planning of all projects in the organization.

Figure 6: A factory-approach to a large set of projects (each with its unique characteristics)

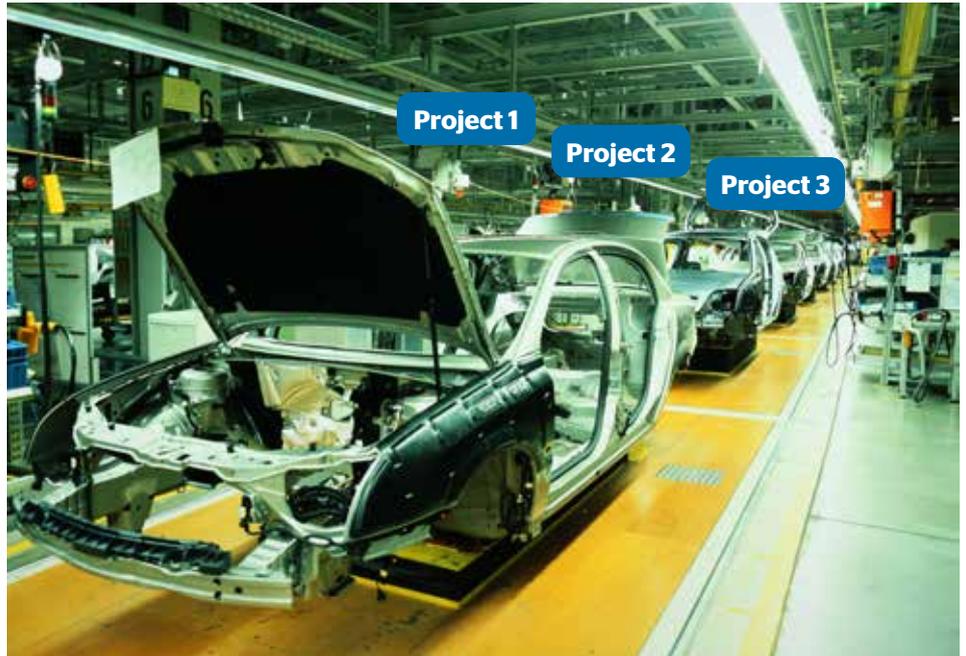


Table 1: Seven Lean wastes applied to Project Management

Seven Lean Wastes	Seven Wastes of Project Management	Symptoms in an IT organization
<b>Transportation</b>	Too many hand-overs. Unnecessary data exchange, paperwork to be re-entered in another system.	Projects delayed and errors in systems delivered.
<b>Inventory</b>	Excess work in progress. More storage (physical and digital) than required, files waiting to be processed.	Unbalanced project or application portfolio. Redundant hardware, multiple redundant repositories.
<b>Motion</b>	Wasted effort searching for information. Accessing poorly designed systems.	
<b>Waiting</b>	Projects held up by inefficient governance. Delays because of slow decision making or non-availability of key staff.	System downtime, slow and outdated hardware, slow response time of applications, manual procedures.
<b>Over-processing</b>	Same issues appearing in project delivery. Many extra steps, often reinventing the wheel.	Reporting unintelligible technical metrics to salesmen and marketers, over-processing of data.
<b>Overproduction</b>	Material written but never read. Sending out or processing items that are still subject to change, sending unnecessary information.	Excess project documentation. Excess service reports.
<b>Defects</b>	Redo of work not related to the primary deliverable. Erroneous data entries, invoice errors, knowledge drains.	Many defects in IT systems. Systems not fit for purpose. Bugs, errors, unauthorized access, mismatches in data structure.

# Agile meets DevOps

## Applying Lean principles to Software Development

Based on the Scaled Agile Framework (SAFE®)

The challenge facing an IT organization 'of the past' is to find a way to respond to changes 'for the future'. The answer has quite recently been sought in Agile/SCRUM methodologies that enable Continuous Integration with the promise of faster projects, more value for money and involvement of the business through a Product Owner.

Agile/SCRUM has proven to be a step in the right direction, but not quite enough. One could say that DevOps - the combination of Development and IT Operations - is matured Agile.

DevOps takes Agile a step further by enabling continuous delivery with faster Time-to-Market, lower Total-Cost-of-Ownership, Automated Provisioning, Automated Testing and Continuous Deployment. This significantly reduces feedback loops and mitigates risks.

DevOps breaks down the traditional silos with multidisciplinary teams, providing a continuous flow of new innovative features to the customer; eliminating waste through maximum automation (e.g. reducing manual hand-overs); and dramatically decreasing lead time from "Go" to "Show" by using unified 'product teams' instead of separate 'project & maintenance teams'. The extension of continuous Integration is seen clearly in a far higher level of automation in respect of both QA and the deployment, whereby every commitment flows into a production release.

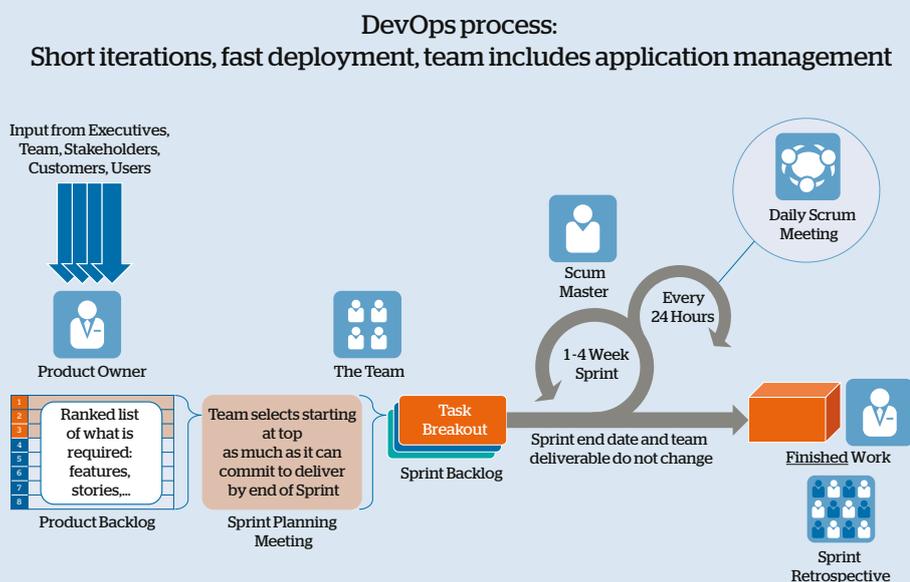
**Atos plays a leading role in the development of DevOps. The Atos DevOps manifesto in a nutshell:**

- ▶ Customer satisfaction over processes and responsibilities.
- ▶ Business functionality over process compliance.
- ▶ Automation of processes over labor-intensive tasks.
- ▶ Evaluate and improve over contractual agreements.
- ▶ Knowledge over documentation.

**By applying DevOps, organizations see the following benefits:**

- ▶ Improved quality of code - 50% fewer failures.
- ▶ Improved quality of software deployments - 12 times faster restore.
- ▶ More frequent software releases - 30 times more than "non DevOps" organizations.

Figure 7: The DevOps cycle



**This translates into productivity increase and cost savings:**

- ▶ Productivity increases of up to 40%.
- ▶ Software development effort reductions of up to 25%.

“Using the SAFE® framework we are able to implement a well-governed DevOps organization that truly runs like clockwork”.

# The Atos ITIL ProcessHouse

## A best practice model using the ProcessHouse methodology

ProcessHouse is a tool for creating reference models. Over the past few years, reference models have been created for various business sectors, including Discrete Manufacturing and Pharmaceuticals.

The power of ProcessHouse lies in ability to adapt to any given process model: the best practice to the specific need of a given organization. The ProcessHouse models consist of a number of hyperlinked MS-PowerPoint slides that are generated from an MS-Excel database. As the PowerPoint slides are generated, there is no need to manually adjust the process drawings, just entering the core data is in an MS-Excel sheet and pressing the "create PPT" slides automatically generates the process Powerpoints (see Figure 8). The advantage for both consultants and clients is the tremendous reduction in time spent on adjusting and regenerating process maps.

**Table 2: Atos ITIL ProcessHouse in MS-Excel**

Atos ProcessHouse PowerPoint Process Generator					
Clear Data-sheets	Fill Empty Spaces	X-Test	Duplicate For Translation	Insert Line	Create PPT-Slides
Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
ITIL Service Operation	Service Operation	Incident Management	Incident Escalation	Functional escalation. As soon as it becomes clear that the Service Desk is unable to resolve the incident itself (or when target times for first-point resolution have been exceeded - exceeded - whichever comes first), the incident must be immediately escalated for further support.	
ITIL Service Operation	Service Operation	Incident Management	Incident Escalation	Hierarchic escalation. If incidents are of a serious nature (for example Priority 1 incidents) the appropriate IT managers must be notified, for informational purposes at least.	
ITIL Service Operation	Service Operation	Incident Management	Incident Escalation	Each of the support groups involved with the incident handling will investigate and diagnose what has gone wrong - and all such activities (including details of any actions taken to try to resolve or re-create the incident) should be fully documented in the incident record so that a complete historical record of all activities is maintained at all times.	Press "HThere"HLincident_logging.png"HC for more information

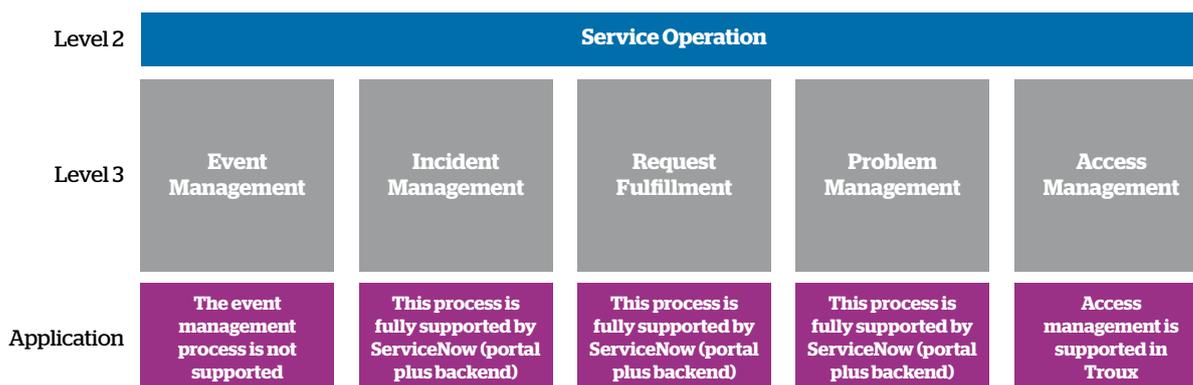
Just entering the data into the MS-Excel sheets is sufficient to generate the different process levels. Level 2 and level 3 are displayed on one slide. Clicking on one of the level 3 processes, leads to a detailed description including swim lanes (see Figure 9). This has proven to be very valuable in a workshop setting as participants receive immediate feedback on any changes they propose.

On level 4 the various ITIL activities are provided, which are described in detail on level 5 (see Figure 9 on next page). Pressing the hyperlink in the Info boxes, opens the corresponding BPMN workflow (see Figure 10).

On the highest level a process portal has been created (see Figure 11 on next page).

The Atos ITIL ProcessHouse has proven itself in the context of assessments: comparing the Current Mode of Operations (CMO) with the ITIL Best Practice and based on these the definition of the Future Mode of Operations. The ITIL Best Practice serves as a reference for defining the Future Mode of Operations. In addition, it appears to be a valuable knowledge tool in those cases where a simple set of PowerPoint slides is good enough.

**Figure 8: Level 2 and 3 of Atos ITIL ProcessHouse in MS-PowerPoint**



# The Atos ITIL ProcessHouse

## A best practice model using the ProcessHouse methodology

As part of the Service Management proposition, Atos Consulting has now created the ProcessHouse for IT Service Management processes based on ITIL 2011. It contains a full overview of the five ITIL 2011 core processes, using 4 levels of abstraction, where the lowest level provides BPMN flowcharts.

This Atos ITIL ProcessHouse contributes to the full set of Atos Consulting Services in the IT Service Management domain. As well as the ProcessHouse best practices we also offer IT Service Integration, service management improvement based on Lean Six Sigma, and implementation capabilities for IT Service Management tooling such as ServiceNow.

Figure 9: Level 4 and 5 of Atos ITIL ProcessHouse in MS-PowerPoint

Service Desk Agent				
Incident Coordinator				
Incident Analyst				
Incident Manager				
CISR Team				
Level 4	<b>Incident Identification</b>		<b>Incident Logging</b>	
Level 5	<ul style="list-style-type: none"> <li>Work cannot begin on dealing with an incident until it is known that an incident has occurred. It is usually unacceptable, from a business perspective, to wait until a user is impacted and contacts the Service Desk.</li> </ul>	<ul style="list-style-type: none"> <li>As far as possible, all key components should be monitored so that failures or potential failures are detected early so that the Incident Management process can be started quickly.</li> <li>Ideally, incidents should be resolved before they have an impact on users!</li> </ul>	<ul style="list-style-type: none"> <li>All incidents must be fully logged and date/time stamped, regardless of whether they are raised through a Service Desk telephone call or whether automatically detected via an event alert.</li> </ul>	<ul style="list-style-type: none"> <li>All relevant information relating to the nature of the incident must be logged so that a full historical record is maintained - and so that if the incident has to be referred to other support group(s), they will have all relevant information to hand to assist them.</li> </ul>
Info	Press <a href="#">here</a> for more information		Press <a href="#">here</a> for more information	

Figure 10: Level 5 corresponding BPMN workflow

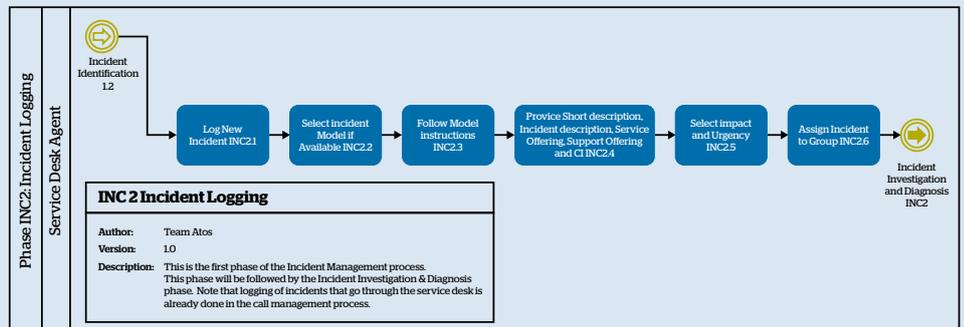
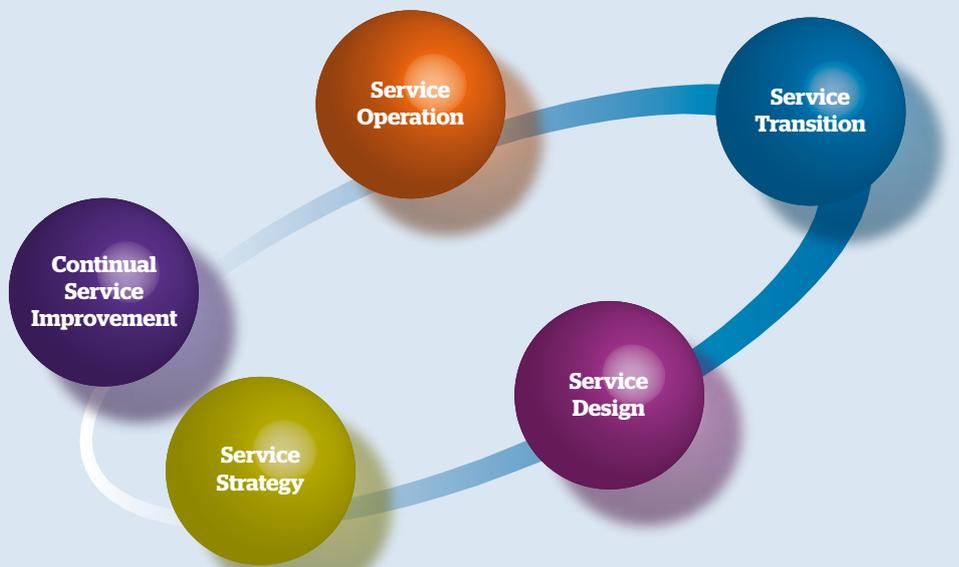


Figure 11: Atos ITIL ProcessHouse process portal in MS-PowerPoint



# The Lean IT Pyramid

## Lean principles at the core of transformation

Lean principles have been applied in the manufacturing industry for a very long time, but in recent years we have seen the Lean philosophy gaining substantial ground in the service industry, more specifically in IT services. The main trigger for this movement is the perceived inefficacy in large IT projects, which manifests itself in unmet timelines, scaled down acceptance criteria and overspending. Equally, the targeted efficiency levels in IT operations still pose a challenge to many organizations.

In a nutshell, Lean IT enhances the performance of IT processes and services and eases the partnership with the business.

So how can an organization kick-off its Lean IT transformation journey?

A widely acknowledged framework for assessing the maturity of Lean within an IT organization is the Lean principles pyramid by Steven C. Bell and Michael A. Orzen, see figure 12.

### Lean IT pyramid

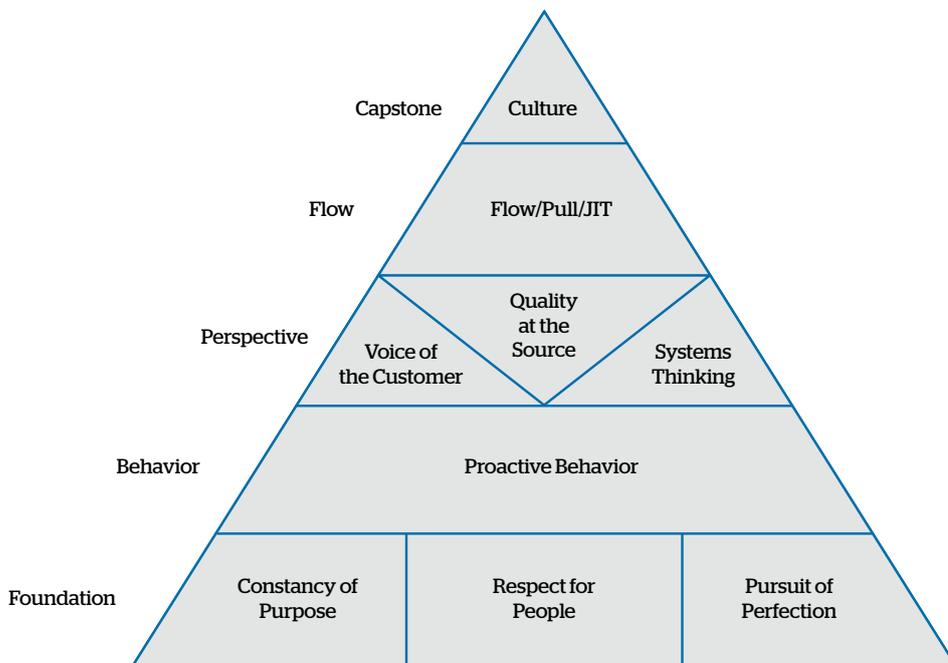
The Lean principles of Bell and Orzen are specifically designed to be applied in an IT environment. They provide guidance to IT practitioners in the transition towards operational excellence and help in laying the foundation for a culture of continuous improvement. Additionally, complying with these principles will result in a better understanding of the business needs.

“Lean IT enables organizations to beat complexity and drive higher quality in IT projects and operations”.

### The 9 Lean Principles

- 1. Continuity of purpose**  
Obtaining clarity of the organization's strategic plan and getting the team to collectively row in the same direction.
- 2. Respect for people**  
Unlocking the creativity and potential of people by treating them with genuine respect and creating a culture of positive engagement.
- 3. Pursuit of perfection**  
Creating a learning environment which stimulates continuous improvement and where challenges are effectively addressed.
- 4. Proactive behavior**  
Let employees take initiative and assume personal responsibility for the quality of work.
- 5. Voice of the customer**  
Understanding the customer's requirements and preferences as a prerequisite for successful value creation.
- 6. Quality at the source**  
The act of identifying and solving problems directly at the source and thereby preventing imperfect work to reach the next point in the value stream.
- 7. Systems thinking**  
Develop an understanding of the interdependent structures in an organization to identify where value is created or waste is added.
- 8. Flow/Pull/JIT**  
Strive towards a flow of materials and information without any interruptions throughout the entire value stream.
- 9. Culture**  
Shared beliefs and values that promote an a mindset on continuous improvement.

Figure 12: The Lean IT Pyramid



# Lean IT Partnering

## The road towards effective and efficient IT partnerships

### Lean IT in a connected world

In recent years we have seen technological innovation and globalization significantly change the way companies conduct business and manage their operations. The marketplace is now more connected than ever as companies seek to carry out activities together with suppliers, partners, customers and stakeholders. Effectively tapping into the interconnectedness of the marketplace enables companies to achieve higher levels of strategic agility and enhance their competitive edge.

Partnerships in the area of IT are also no longer a trend, but have now become a normality. The shift from traditional customer-supplier relationships to partnerships in IT is now more evident than ever. Companies are recognizing that high quality information and highly functional systems are essential to perform sustainably in a competitive world. Hence the decision to engage in an IT partnership with a supplier is considered of strategic importance.

At the same time, the Lean philosophy is also gaining a greater foothold in the IT services industry. The growing demands on IT to deliver services right the first time requires a focus on the continuous improvement aspect of information and information systems. The Lean IT pyramid (Bell & Orzen) covered in the preceding chapter is a useful framework for companies pursuing an increased level of Lean maturity in their IT organization.

But what about applying Lean principles in IT partnerships? Nowadays heaps of organizations can call themselves successful Lean practitioners, but many of them face challenges when shifting the scope from an internal application of Lean to a partnership level.

As strategic IT sourcing often has a significant impact on operations, a growing number of stakeholders in IT services recognize the importance of thinking from a holistic perspective taking into account the entire partnership. This means viewing the interconnected processes from supplier to customer and being mindful of the cause-and-effect interdependencies and which ones either add value or create waste.

### IT partnerships

Before embarking on a Lean IT partnership journey, it is important to distinguish between the different types of IT partnerships based on the nature and level of complexity and outsourcing.

#### Relation types

<b>1. Classical supplier relationship</b>	
▶ Nature	Transactional relationship between two firms.
▶ Goal	Attain cost savings.
<b>2. Partnership</b>	
▶ Nature	Strategic alliance between two firms.
▶ Goal	Create synergy resulting in benefits for each partner
<b>3. Network relationship</b>	
▶ Nature	Organic & flexible structure between three or more firms.
▶ Goal	Bundle expertise to deliver highly complex products or services.

These different types of outsourcing relationships require different levels of collaboration, trust and have different incentives to apply Lean. Hence, it is essential to engage in the type of IT partnership that matches the strategic intent, competencies and the ways of working of both partners.

### Lean IT assessment

As a member of the Lean Education and Research Network (LEARN), Atos has played an instrumental role in a Lean IT partnering research study. This study has led to advanced insights into the barriers and drivers for success in Lean IT partnering through analyzing a selection of case studies and holding workshops to examine improvement potential. Additionally, the research findings postulate how partners can create value through Lean leadership and how to select the appropriate Lean tools and techniques that fit naturally with the objectives of the IT partnership at hand.

### 4 Steps of the Lean IT scan

The LEAN IT scan offered by Atos assesses your IT partnership on the Lean enterprise principles created by Bell and Orzen. By following a 4 step plan, our clients are not only provided with a deeper understanding of where they are on their Lean journey, but also an ability to detect gaps to the desired state and recommendations for addressing those gaps.



### About LEARN

LEARN is an initiative of Nyenrode Business University. The objective is to promote innovation and excellence in organizations through development, training and application of the Lean management philosophy. Atos is a research partner of LEARN and contributes by bringing in experience and knowledge from the field.



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# Why Atos Consulting?

## Our expertise and experience

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Atos Consulting offers a unique combination of knowledge, experience and pursuit. We have an extensive pool of certified consultants that bring in years of experience in optimizing processes at the interface of Business and Information Technology. As part of a global IT company, we know how to best access and extract value from data. We can manage Lean Six Sigma projects for you, but we also offer training trajectories to pass the essential skills to your staff and enable them to lead quality improvement projects autonomously in the future. A highlight of our approach is the sharing of knowledge and experience by our experts, onboarding the employees in (cultural) changes and providing insights into methods for sustaining improved quality levels after implementation.

### Our approach

Our success formula in Lean and Six Sigma projects is characterized by consistently working closely with the client in both the design and implementation phase of the project to ensure that quality improvements are sustained and a culture of continuous improvement is created.

The ultimate goal of our service offering is not the delivery of a product, but to ensure clients are left with a stronger operational capability. The focus lies on improving the learning capacity of the client organization so that they can do it themselves tomorrow. Hence it not uncommon for our role to evolve from managing to guiding and eventually to coaching.



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# Our team

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## More information

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# About Atos Consulting

Atos Consulting is the consulting arm of Atos and an integral part of the company. It provides «end-to-end» services and solutions, ranging from supporting strategy development through to enterprise solutions and technology decisions.

Its capabilities include a fully integrated approach that ensures that every aspect of organizations - people, process and technology - is fully aligned to the business strategy.

Atos is a leader in digital services with 2014 pro forma annual revenue of circa € 11 billion and 93,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market. Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, and Worldline.

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