Spotlight on Application Transformation

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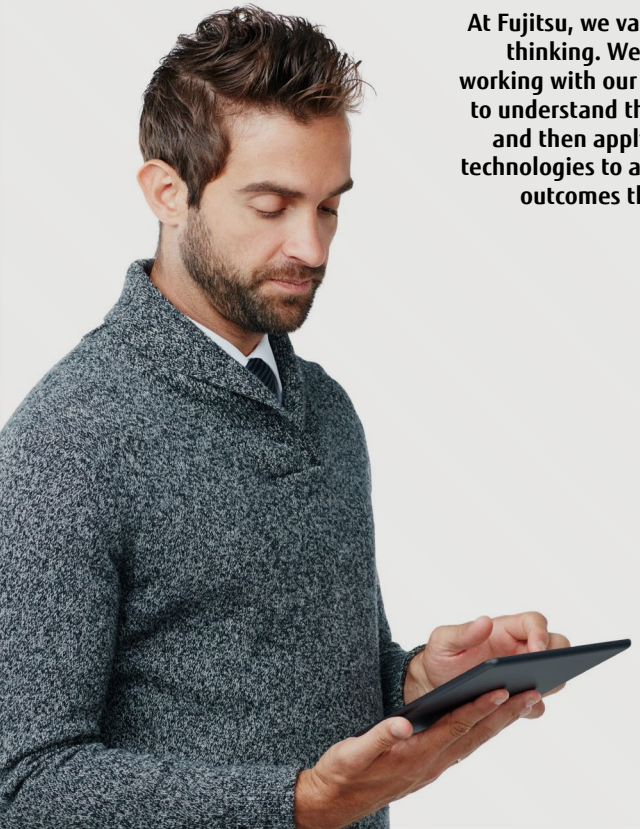
Applied Thinking on Application Transformation



At Fujitsu, we value critical thinking. We believe in working with our customers to understand their needs, and then apply the right technologies to achieve the outcomes they desire.

In a world where applications are critical to how an organization functions, and serves its employees and customers, it's important to step back, take stock, and think things through properly.

That can be difficult. Disruption is always around the corner. A competitor always seems to be going faster than you. Technology is constantly changing. Predictions about the future are constantly shifting. The needs of your people are evolving. Everything seems to be shifting under your feet.

But there's a well-known African proverb that sums up our approach: 'If you want to go fast, go alone. If you want to further, go together.' Working with a partner always pays dividends. Why? Because it helps you think through what needs to be changed, and what should stay the same.

Your applications represent significant investments in both the present and the future. You know the world will change – technology will evolve, new opportunities arise – but if you're going too fast, and alone, then it's harder to gain the perspective you need to make the right decisions.

That's what our 'Spotlight on Application Transformation' is all about. It's been designed to help you think through the wide range of technologies, options and possibilities that you need to deal with, both in the short- and long-terms.

We've brought our best minds together to provide you with short overviews of the critical issues you need to think about as you seek to transform your applications to meet the demands of 21st century society. From Automated Migration to Performance Management, Robotic Process Automation to AI, Augmented and Virtual Reality via DevOps, through to Process Optimization. All are subjects that will impact your organization in one way or another.

Our approach is a human one. That's why we put the emphasis on 'thinking' – and we apply that thinking to real-world issues and objectives. It's not the technology that counts, it how you use it to further your aims. Fujitsu's approach is a human one. We always focus on the human. As the famous Dutch computer scientist, Edsger Dijkstra, once put it: "The question of whether machines can think is about as relevant as the question of whether submarines can swim."

The bottom line is: how can your applications serve your business aims? It should not be the other way around. So, the articles will help you think about the current state of your environment, and what future environment you need to build. It must be robust and modern. It should be as future-proof as possible. It must provide optimization to your processes and help you establish new ways of working. Automation should free your people to do better, more rewarding and challenging work as well as speed your processes and reduce costs. Your data must become an asset that generates insights and actions which can make a decisive difference to your market standing.

How do you do all that and keep your business running? It's a challenge, there's no doubt about that. There are pitfalls as well as benefits. Working with a partner that has seen them all can be vital.

You can read these articles in any order. They're all self-contained. We hope they help you apply your thinking in more focused, and informed, ways.

Enjoy.

Ron Commandeur
Application Transformation
Proposition Manager (EMEIA)

The Examined Enterprise:

Knowing How You're Performing is the Key to Achieving Digital Transformation

Mikko Satama
Development Manager,
Fujitsu Finland

Philosophers tell us that "The unexamined life is not worth living."[1] And it's true. Every individual should understand why they're doing what they're doing; how they're performing; and how they can do better.

What's true of the person is true of the enterprise. It is, after all, made up of people. More precisely, people using technology. So, you need to be able to measure how people are performing, and how your technology is performing.

If you can see and measure performance – human and digital – then you are better able to manage those people and the IT they are using to run your organization and, most importantly, serve your end-users and customers.

That's the whole point of Performance Management. It's a very simple concept: see it, measure it, master it. If you take that concept and apply it to the human society, then you get broad benefits for all. You have a truly intelligent society. One that can measure what works and what doesn't and is then able to improve and innovate for the benefit of all. That's the core of Fujitsu's Human-Centric approach to technology.

1. Socrates

It's also amazingly good business. Business leaders have, in my opinion, a duty to examine their organizations very closely. In real-time and across time. They should define Key Performance Indicators (KPI) which deliver successful outcomes for the business (its people, its stakeholders and its customers), and then be able to examine each of the elements that contribute toward achieving those KPI's.

The data then empowers the business to constantly improve in terms of the happiness and effectiveness of employees, customer relationships and satisfaction, productivity and efficiency. It also enables the business to understand how effective its investment in technology is, and to better deploy capital (or operating costs) to achieve greater, long-term value.

We are entering a new era of performance management. It's defined by Next Generation Digital Performance Management which offers Next Generation Visibility. That helps organizations move from their 'as is' state, to their desired 'to be' state by enabling them to invest in the right applications and platforms, and make the right choices in areas such as the cloud, for instance.

Importantly, it helps businesses ask the right questions of their end-users. There's no point developing or buying in applications that end users don't want to use. That's certain to encourage the use of 'shadow IT' and reduce control and visibility.

The most urgent question you need to ask is – 'What do your people want and need?' That can only be done by engaging with them on a human basis. Technology can't do it for you. But it can enable you to deploy the right tools and monitor them once you've got the answers you need. At Fujitsu, we work with customers to examine all aspects of their enterprise – to work out the right questions, ask them, and then act on the answers.

It's a proactive approach. That's important. Running to keep up with your competition while you're looking backwards at what's going on in your organization will inevitably lead to a stumble. You'll lose time and pace.

Implementing Next Generation Digital Performance and Application Management means that you can do a range of important things:

- All the layers of your business are visible, which means you gain metrics from the front- to the back-end, from infrastructure to cloud
- You can measure how each KPI is being achieved through a pre-configured dashboard that reveals your digital business transaction performance
- You get to understand your end-user experience based on response times and failure rates
- You can understand the behavior of end-users – their individual journeys, how long they stay engaged with you, and at what rate they disengage
- Artificial Intelligence can be used to ensure your business can alter actions proactively and resolve problems swiftly
- When you make a change, you can see what its effects are, and ensure they're the effects that you want
- Crucially, you get a 'single truth' and 'single view' of your enterprise for all stakeholders which makes you more agile and better able to understand the impact of every action taken across your business.

Fujitsu delivers all those things, and it's at the heart of our approach to performance management. It's the key to achieving that 'examined enterprise' and using the insights you get from real-time information to forge a truly digital future that delivers benefits to all.

You can measure how each KPI is being achieved through a pre-configured dashboard that reveals your digital business transaction performance.

Mindset over Method:

How Building a DevOps Culture Is More Urgent than Looking for Tools or Solutions

A lot of people have the wrong idea about DevOps

Many believe that DevOps is a set of methods and tools that you deploy to make an enterprise more productive, competitive and innovative. If only it were that simple. Imagine a 'Plug-and-Play' DevOps solution that needed very little input from the organization – that would be amazing.

It doesn't exist because DevOps isn't easy, it's a challenge. It takes a lot of work and the bottom-line is; it's a culture, a mindset that means you're open to doing things very differently from the way you did them before. It's not a process, it's a total approach to things and people and objectives linked to well-defined business outcomes.

As Gene Kim put it in his bestselling novel on the subject, The Phoenix Project, you need "to create a culture that reinforces the value of taking risks and learning from failure and the need for repetition and practice to create mastery".[1]

The key to a DevOps culture is joining the dots

When numerous teams work in isolation you get confusion, unhealthy competition for resources (and praise!), as well as silo development. Bugs in software, or mistakes in design, get passed down the line without being picked up. That means, at one point (usually a critical one late in the game), everyone must turn back, unravel complex systems, and often start again.

In the modern digital economy, time is of the essence. You need to develop ideas and solutions much faster than ever before. If you don't, someone else will. When you bring the right people together – development people and operations people – you get a single team, with a single view of the organization and of the objective.

Everyone works together in one direction. It works across the whole set of solutions that you need to implement: from application software to databases, middleware, networks and hardware, networks to infrastructure. Those responsible for each of those areas must be part of the team.

It sounds so obvious because, well, it is obvious. But, given the complexity of most organizations, with their legacy systems and siloes, it's no surprise that achieving that unified team is a challenge. It's no excuse. That challenge must be overcome.

The new mindset should be willing to do what Gene Kim's character says in his unlikely bestseller (who ever thought you could write a novel about DevOps!?) – take risks, learn from failure, repeat. In the past, many businesses needed to be sure that their product or solution was completely finished and perfect. They were reluctant to release it until they could prove that it was.

That doesn't work anymore.

Mike Deverell
Head of Government Transformation Services

Francisco Quintero
Head of Automation

1. Gene Kim: The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win

Don't wait till your 'stars' are perfect – expose them to reality early

It's a bit like managing a football or rugby team. You know you've got fine young players coming through, but you wait and wait until they're totally ready. But, what you forget is that they can't be ready until they've had game-time. They need to learn on the pitch as well as the training field. The best way to find out if a player really is the star you think they are, is to put them in the front-line and see how they react.

The same is true in the development of any business solution or application. You need to create an environment in which it's OK to try something new and see it fail. If it's a complete failure, you'll learn which ideas work and which don't. If it's a partial failure, you'll know what to change. Do it quickly, and you'll have more chance of being ahead of the curve.

From 'Waterfall' to Agile

The traditional 'Waterfall' approach used a sequential method of development: requirements, plans, procurement, design, build, testing, and then release. There was little or no attempt to get feedback from users until the very end. If the application didn't deliver what they wanted, then the whole project was a waste of time, and it was back to the drawing board.

It's no surprise that 'Waterfalls' are out of date. They're not fit for digital. Now, the aptly named Agile method is the core of the DevOps culture. One team does everything together, starts small, and always talks to end-users at the start of the process. Their feedback informs the beta releases, and improvements are made incrementally to achieve a positive outcome which can then be released to the whole organization.

'Waterfall' is good for building big, physical things like bridges or roads. They're hard to test in stages! But, services and applications are perfect for the new DevOps methodology. You just need your culture to change so you can implement it.

The key idea in Agile is the ability to work continuously. It's a fluid process rather than a set of isolated actions. Each action leads to another action, and then back again. That's why Continuous development, testing, integration and deployment are so important to the approach. It never stops. Which means you get the chance to get better – continuously. That's how you increase your speed to market, reduce the chance of failure due to defects or bugs, and improve quality and productivity all down the line.

And remember that infrastructure is always a key part of the application. It's not just a foundation, it adds to the dynamism of what you're doing. A good tip is to 'treat it as code.' That's a great way to change your mindset and free your ideas.

The 'Ops' are as important as the 'Dev'

A lot of focus is always placed on the development cycle, but the 'Ops' in DevOps is what makes the whole culture work. Operations are how 'things' are deployed within an enterprise, and in a marketplace. For a product or application to work the whole business had to feel a sense of ownership. That's why bringing business perspectives and the views of end users into the agile cycle early is vital.

Quite a few years ago, a major bank had a great idea for a feature that would make the life of employees better. On paper, it looked like a surefire hit. It would enable users to do three things – let's call them X, Y and Z – much more efficiently and save the bank money.

A lot of focus is always placed on the development cycle, but the 'Ops' in DevOps is what makes the whole culture work.

So, over the course of 18 months or so, several separate teams worked to build the application. When asked, about half way through, what the users thought of new application, a key member of the development team was surprised at the question: "We haven't asked them – we just know they need it."

Unsurprisingly, when the application was released, the end users asked why the application didn't do A, B and C as well as X, Y and Z which were not their true priorities. The investment in the project was wasted.

How do you build the DevOps culture?

You need to do two things: change mindsets and ways of working (the cultural part) and bring in the right tools and methods (the technical part).

But, most importantly, you must start with people. People generate a mindset, machines don't. DevOps is all about people. At Fujitsu, we take a human-centric approach to everything we do, and that's why our customers value our ability to see where the problems lie in terms of the organization and mindset of the people involved, and then work with them to change how they work and generate the right culture.

Only people can implement DevOps. They must work as a team, be aligned to all the objectives, and have a total view of the project. And don't expect there to be a definitive approach to DevOps. There isn't. There is no one-size-fits-all approach. That would be too easy. But, it also means that you get the DevOps that's tailored to your business.

At Fujitsu, we ensure that the technological side of DevOps matches your ambitions and enables people to do their best work. So, that encompasses everything from using the right development tools to monitoring applications and providing metrics that keep everything on track.

It's important to be able to spot problems before they either slow down the team's work, or stop it all together. We are experts at doing that – fixing problems before they even arise.

We work to improve processes, utilize the right tools, boost functionality and deliver the right levels of support so that each tool is effective, and each team member can work to their full potential. Fostering collaborative working is also vital.

Finally, you also need to articulate the DevOps culture internally. Explain how it makes everyone more effective within your, unique organization. There is no one-size-fits-all DevOps: you need to build your own, and make it your own. Fujitsu can help you do it.

Noun, Verb, Attitude:

Process Optimization on an Enterprise Scale

How many times a day do you use or read the word 'process'? A lot. By most lunch-times you'll have lost count. It's one of those words that seem to be in everything we read in the Digital Age. And, consequently, we take it for granted. Most of us use it to describe a set of actions (mostly mundane) that need to be done (usually one after the other) to achieve a business outcome of one kind or another.

It's easy to see each process in isolation. But, every enterprise is the sum of all its processes, and is itself one big process. That's why I'm interested in what the word really means. If you look it up, you find that's it both a noun and a verb – a thing and an action or set of actions. I like to think that the way we define 'process' within Fujitsu means that it's also an attitude – a way of working – that's both dynamic and holistic.

Process is about working toward a goal. It's a set of actions that are focused on an outcome that has been pre-defined based on an objective. It's a journey and a story. A set of human interactions with other humans and with the machines that serve them. As you can see, it's a very dynamic word and idea. That's the way we see the entire enterprise: as a dynamic flow of inputs and outputs that are designed by people.

That human element is very important. Your enterprise wants to achieve something. It has specific goals. It also reacts to what's going on around it: market competition, regulatory changes, and social developments. The processes you put in place should respond to that dynamic environment and ensure you're agile enough to stay ahead of change – and sometimes drive the change that benefits you.

I see my role as enabling customers to optimize their processes: end-to-end, top to bottom, internal and external. It's a holistic approach that focuses on the whole enterprise first, and then drill down to specific processes, but always keeps in view how each individuals process contributes to the whole. That's the attitude part of my formulation: noun, verb, attitude.

Nerys Mutlow
Head of SaaS UK

At the heart of that attitude is the effort we put into understanding the strategic objectives of each of our customers.

At the heart of that attitude is the effort we put into understanding the strategic objectives of each of our customers. Once we've done that, we can then understand how to organize, deploy and support the end-to-end processes needed to deliver those objectives.

We always start optimistically. Each process can be optimized. Made better. Ramped up. Sped up and made delivery more efficiently, cost-effectively and productively. Speed is of the essence in a world where new business models can arise in the blink of an eye. That's why we always target rapid processes that can be quickly deployed.

Speed is all about integration. If processes work seamlessly together then they are, by default, faster. There are no bottlenecks or logjams. Work flows from the back-office to the frontline in both directions so everyone can do what they're supposed to do at the time they need to do it. Key to doing that is a sense of control from the center: a single pane of glass which provides clarity of vision to anyone who needs it, through any device they choose (or need) to use at any one moment in time.

It is a simple concept: making everything work better together across the enterprise – inside and out – across time and space.

Our broad approach to everything we do make us different at Fujitsu. We never start by telling customers to rip out all their legacy systems and start from scratch. We identify the processes that are already working well and look to make them work better. For those that could be transformed, we work to integrate them, upgrade and augment them, and if they can't keep pace with the needs of the enterprise, only then do we replace them. We only deploy new technology if it can make an immediate (and measurable) difference.

The use of platforms such as ServiceNow, RunMyProcess (RMP) and SaaS products developed by Fujitsu such as Smart Audit, are key to our approach. They've been developed (or acquired by us) to deliver that end-to-end capability which our customers need in a fast-moving marketplace. Many companies are thinking about replacing their Service Desks so they can offer their users a more consumer-like experience. That's vital. I often hear people talk about going to work, ordering books and music online, having a fast, transparent and friendly service, then walking through the doors of their organizations and feelings as if they've gone through a time-travel portal. Suddenly, they're back in a time when it's hard to order what they need, they don't know when it will turn up or if the order is correct, and when it arrives (unexpectedly) it's hard to rectify (common) mistakes.

That's not good enough in the Digital Age. Most organizations know it. ServiceNow has been designed to make the necessary transformation easy to do. It's a platform that supports processes that work. It is cloud based, so it's less capital intensive, and it supports all the ITIL best practices you'd expect it to. Crucially, it's not exclusive to IT – it can be used to integrate all processes that the employees interact with. So, if they engage with HR or finance, security or facilities, they interact through the same platform and get access to the same functions and actions which are then integrated with all the other functions and actions within their enterprise.

That makes the whole enterprise more efficient, and gives users the transparency and sense of control they crave. It also makes them happier and more productive, which is the really important point. ServiceNow enables you to build applications that take into account all the processes that matter. Again, it's the holistic – Enterprise as a Process – approach.

At the heart of our work is the user experience. They want simplicity and speed. They just want stuff to work and things to get done. RMP enables you to transform existing or build new applications that get those fundamentals right. As I said before, creating a holistic experience of all the departments within an enterprise, from service desk to HR, facilities, security through to finance, requires you to get the individual processes right.

If you start by digitizing a form that gathers information – employee or customer data, it doesn't matter – then you can use RMP to ensure that share that data across departments, integrating into their existing systems without having to duplicate work or waste time. And you can gather data from people or devices; the explosion of IoT technologies will make RMP even more effective.

Smart Audit builds on that IoT explosion: you can use it to free employees from tasks that take time and remove them from customer service, such as – in a retail context – checking fridge temperatures or whether exits are clear, or if fire-doors are open and so on. The technology does it for you, records the data, shares it, stores it and integrates it with any other process that can make use of it to ensure efficiency.

And as your processes evolve and change then RMP can cope with that progress. It is, after all, a process. It's not a rigid set of procedures. It's designed to change and flex with the needs of the enterprise. That in turn, allows the enterprise to evolve within its sector as it reacts to outside forces and demands.

You get a unified digital experience and the ability to deliver change at digital speed and at scale. It's how you can empower your digital innovation. At Fujitsu we've even built connectors so you can just plug in to the future as quickly as you want to.

It's an approach and an attitude that makes us different. You'll never look at the word 'process' the same way again.

It is cloud based, so it's less capital intensive, and it supports all the ITIL best practices you'd expect it to.

The Application Challenge and the New Drivers for Change

The modern world is run by applications. In every sector of industry, applications support critical business processes of all kinds. Which is why it's so important to be able to manage and migrate them in a cohesive and robust way. It's a challenge that I see customers deal with every day. Many of them have a variety of applications in their estates that range from traditional legacy applications which have been around for a long time, to more recent ones built on reasonably modern technology.

That mix is at the heart of the 'Application Challenge' as I like to call it. It stems from the different natures of those legacy and modern applications. But the challenge is also an opportunity.

In one of Europe's largest insurance carriers you can find a 30-year-old, green-screen system that by modern standards, is positively ancient. It was developed at the dawn of the Information Age to support the company's key policy administration functions. And it still works!

What also still works, thankfully, is the core system that keeps the 7,000 plus aircraft that are in the skies over the US at any one time: it was developed before that insurance system in the 1970s.[1]

David Cairns
CTO Hybrid IT

Both are sufficiently robust to perform their essential tasks, but they can't keep up rapid change. In fact, they're unable to support the new demands that their respective organizations need to confront. Those demands include mobility, better and more intuitive user experience, swift integration with digital services, and the challenges of a world of rising cyber-security threats.

It's clear that change is urgently needed.

But it's not just the 'ancient' systems that need to change: even more recent applications do. Sure, most of them were built on fairly recent technology platforms, but they now need to support different and rapidly changing requirements demanded by the Digital Age.

Research recently carried out by Pierre Audoin Consultants (PAC), revealed the extent of the Application Challenge. They surveyed senior business and IT executives from over 500 large enterprises and public sector organizations in the EMEA region, and discovered that 70% of them believe that less than half of their current applications can support the future digital strategy of their organization.[2]

[1] https://www.wired.com/2015/02/air-traffic-control/

[2] http://www.fujitsu.com/fts/about/resources/news/press-releases/2017/emeai-20170124-european-businesses-ageing-technology-is.html

That's a stunning result. It suggests that we're about to enter a major wave of applications modernization projects. And, I don't believe that those initiatives will be driven by cost alone. A key factor in the business case for investing in change will be based on the need to improve the organization's responsiveness. That conclusion is underpinned by the PAC finding that 57% of executives say their applications are making their businesses less, rather than more agile. 56% add that their legacy applications are a drain on their budgets and agree that they could use that cash more effectively by investing it in ways to drive innovation.

Agility is vital. It's a major challenge across all markets. Deutsche Bank, for example, reckons that as much as 80% of its 7,000 enterprise applications were designed and developed in silos. This means that integration has been limited. The bank's CEO described the applications landscape as "cumbersome" and "incompatible."[3]

One of the main paths to modernizing applications is to migrate them to a cloud delivery platform. This can include public cloud environments (from providers such as Amazon, Microsoft and Google), private clouds (a platform dedicated to a single customer) or a hybrid combination of the two.

The PAC study found that organizations in the EMEA region have been relatively cautious in moving their applications to cloud platforms; around 80% have migrated less than half of their enterprise software to date. But, I believe that the next three years will see a significant shift in that number.

The same survey shows that 44% of executives expect to have re-platformed more than 50% of their enterprise applications in the cloud (public, private or hybrid) by 2019.

The financial services look set to lead the charge, with 56% of banks and insurers planning to run more than half their applications in the cloud within the next three years. Indeed, Deutsche Bank expects by 2020 to have quadrupled its use of private cloud systems to 80% and to increase application virtualization to 95% from 46%.[4]

Cloud is, of course, only one answer to the Application Challenge – and the modernization that's urgently needed. Applying business process management wrappers, implementing packaged systems or undertaking data migration initiatives are all options. But doing nothing is not. All businesses must be able to support an evolving digital strategy. It's the only way to compete and survive in a fast-moving world.

PAC recently discussed the key findings of the research, as well as the practical steps that organizations can take to rapidly take some of the pain out of their application burden during a webinar (you can access it here). No matter how good your current applications are, you must be agile enough to respond to change and move swiftly to react to the demands of all stakeholders. It's a challenge, but one that can be successfully met.

[3] http://www.cio.com/article/3004538/cio-role/deutsche-bank-digging-out-of-technical-debt-while-moving-to-cloud.html

[4] http://www.fujitsu.com/fts/about/resources/news/press-releases/2017/emeai-20170124-european-businesses-ageing-technology-is.html

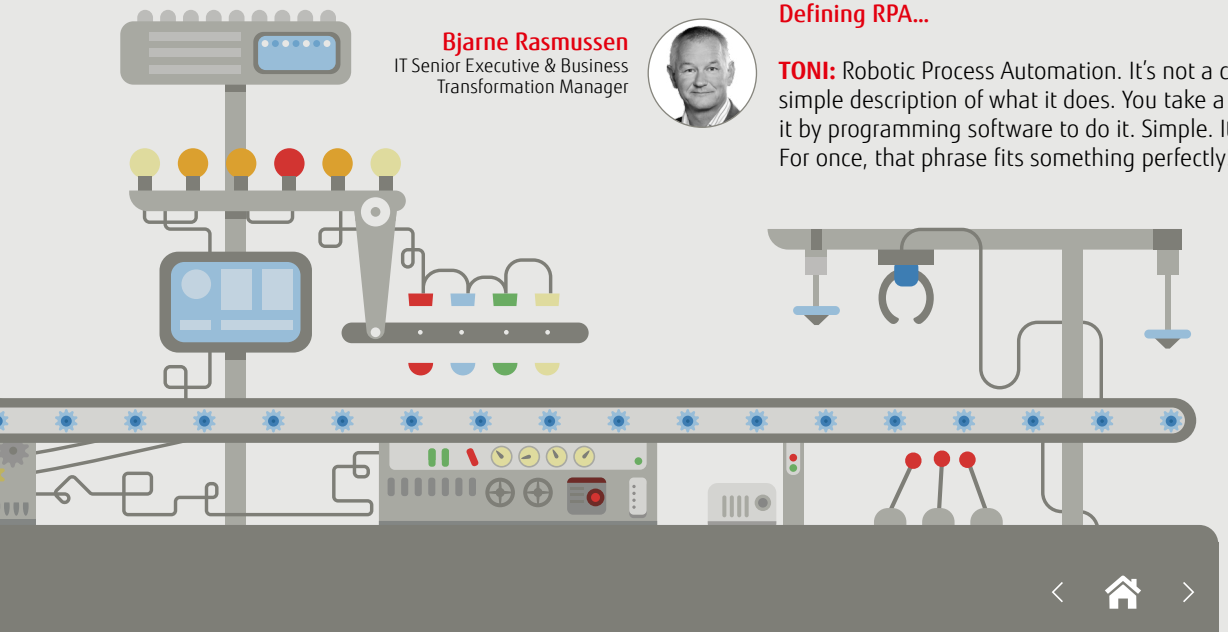
56% of banks and insurers are planning to run more than half their applications in the cloud within the next three years.[4]

It's Not Rocket Science, Just Robots

Robotic Process Automation (RPA) is about freedom from drudgery and giving people the chance to be creative and entrepreneurial. Toni Korhonen and Bjarne Rasmussen discuss the possibilities.

Toni Korhonen
Senior Solution Architect

Bjarne Rasmussen
IT Senior Executive & Business Transformation Manager



There's a revolution going on...

TONI: We're experiencing an automation revolution in the back-office, a place where it's long been needed. Let's be honest; much of the work done in there is repetitive and boring. Humans don't like doing it and they don't need to do it any longer.

BJARNE: It's what happened in factories over a few decades. It's a natural progression. In manufacturing, it was obvious that having a human putting the same screw into the same holes all day long didn't make sense. As soon as the technology was developed to have a robot do it, then the worker was moved to something more creative. Something that needed them to think, use their judgement and intuition. RPA does that for similar processes... just not on a factory floor. It's in an office. So, what's a simple definition of RPA?

Defining RPA...

TONI: Robotic Process Automation. It's not a clever name, just a simple description of what it does. You take a process and automate it by programming software to do it. Simple. It's not rocket science. For once, that phrase fits something perfectly!

BJARNE: And we're not talking about actual robots... I mean, we're not talking Terminator or even R2D2, its software, right?

TONI: Right. These robots interact with IT systems so that data can be collected and moved from one place to another. They fill in fields on spreadsheets or databases. They take data and add it up or subtract it. They fill in forms... all kinds of work that humans say is basically boring.

BJARNE: Clerical factory work. No one ever said it was fulfilling. Now, it can be fulfilled by robots.

And the organizational benefits?

TONI: The major benefits is that you don't have to buy in new IT systems – robots can be introduced into your existing systems, and you don't need to integrate systems with each other either.

BJARNE: That's an important point. When you're building a business case for RPA, it's important to start with the fact that you don't need a whole new IT infrastructure, or a set of new systems, which means you can keep using your legacy IT and get more out of it. So, RPA boosts ROI.

TONI: Two acronyms that work brilliantly together. That's because RPA is digital transformation in the true sense of that phrase – you take out the human factor and create a digital process that just keeps on running, 24/7. The software doesn't make mistakes, never takes a break, and can be modified to change its functions very quickly.

BJARNE: You also achieve full process compliance – which is very important for highly regulated sectors like banking, insurance, utilities and the public sector. And you have a full audit trail of every action, so you know which robot did what and when.

Isn't RPA scary?

TONI: I think we should address the fears about RPA before we talk about how you can make the most of it, though.

BJARNE: Sure. There's been a lot of speculation that RPA is going to cause most of us to lose our jobs. But, there's no evidence for that. In fact, many commentators believe that workers will welcome the chance to ditch the kind of work that RPA can do. The introduction of robots into factories wasn't resisted as much as we think it was – many workers welcomed the chance to work more creatively, to do different tasks during the day, and to work on a whole process rather than just one, tiny part of it. I think that will happen in offices too.

TONI: Some commentators believe that RPA is the only way that humans can cope with the rise in Big Data. If the amount of data coming into an organization doubles every three years – which is what McKinsey says it will[1] – then the pressure on administrators to cope with that volume will be immense. It already is.

BJARNE: Simply, RPA is the only way we can cope with a world of constant, real-time data.

TONI: And, if a task doesn't require intelligence, judgment or intuition then why should it be carried out by a human? There are many, many tasks we need to do every day that require those attributes, so we should free up people to do them. RPA can do that. It already is.

1. The Next Acronym you Need to Know About: Digital McKinsey December 2016

What are the business benefits?

BJARNE: OK, so, what are the business benefits?

TONI: Very simple: at least 50% cost savings and a return on investment in one year.

BJARNE: And you should accept nothing less than that?

TONI: Nothing less. In fact, some people say the ROI could be as much as 200% for some processes. The fact a single software robot can do the work of three or even four people all day, every day, is the main reason for that return. So, you save on headcount.

BJARNE: You can use your people more intelligently. Your processes are done faster and more accurately – so mistakes don't end up costing you money – and you can get more value from the creative and intelligent potential of your people. They can focus on growing your business and making it better. That delivers returns too, of course.

TONI: The technology is there, it's evolving, and it's rapidly being adopted. The point is to start doing something with it.

BJARNE: Which means organizations need to identify the process that can benefit from RPA the most – gain an insight into how it can work, qualify it, and then program the software robots to carry out that process.

RPA can provide 50% cost savings and a return on investment in one year. The ROI could be as much as 200% for some processes.

The robots are controlled through an easy-to-use interface. That allows them to be maintained and monitored.

How do you start?

TONI: It's important to model the process so that your intelligent RPA tools can cope with changes to the process almost instantly. The robots are controlled through an easy-to-use interface. That allows them to be maintained and monitored.

BJARNE: That can be done by your IT team, or by someone like Fujitsu. We work with customers to find the right process to trial RPA, and then we see the project through. We test the process to make sure the robots are doing it right, and that there's a definite return on investment. Then we help customers scale RPA, adapt and deploy it, across the processes that can benefit from it. We're on board all the way.

TONI: Some organizations want to build their own center of excellence – and we can help them do that. Or, if they want us to do it all, we will. We're doing that for a lot of customers right now.

BJARNE: And our advice goes beyond the technical side. We help customers communicate the reasons for moving to RPA, and help them make it clear that this is about efficiency and productivity as well as costs – benefits which then free up workers to be more human. To do more fulfilling tasks.

TONI: We help create a clear roadmap. To ensure that your governance is right – we do that too. And get the right stakeholder buy-in. It's all part of the process.

BJARNE: But not one you can automate!

TONI: No. Though, the next step for RPA is to bring in machine learning and AI – that's already happening, but it won't replace human intuition, passion and intelligence.

BJARNE: Which is good news for us at Fujitsu.

TONI: And good news for everyone else.

AI: The Intelligent Approach

Artificial Intelligence (AI) is continuing to develop very fast, how should businesses think about their approach to the technology?

Before you start thinking about specific technologies, you need to understand the value you want – and can get – from implementing AI. That's precisely what we do at Fujitsu. We help the customers get some perspective; find the best of breed technologies, and work out how they can apply the technology to their specific business problems.

But, it's clear that AI can help them transform their applications, is that right?

Definitely. From an application transformation perspective, the idea is a powerful one: you can take specific capabilities and enhance your existing application portfolio. You can add AI components where they weren't originally built in and put them where they give you value. What's important to understand is that you don't have to re-engineer your complete end-to-end processes. What you're doing is enhancing them.

I find that, when I speak to customers, that always gets their attention. It's an interesting way to frame the argument for AI. It's about business processes; how you can use AI's capabilities in incremental ways or, if it's necessary, in completely transformative ways. That's why it's important to have a good partnership with a company like Fujitsu, which is at the forefront of applying it to business in the real world across many sectors.

Tim Moody
Fujitsu Fellow & Distinguished Engineer

Do enterprises understand what's possible?

It varies. Some do, some don't. Everyone has heard about AI, but it's important to get a true understanding of the art of the possible. Getting a basic understanding is the first step to uncovering the opportunities because there are so many ways in which AI can make a big difference, in terms of costs, productivity and customer service.

So much is possible. You need to focus on the actual processes that could be improved within your business. To do that you need to step back and be objective. That's why it's important to work with an expert partner to help you understand how AI can improve your processes, a partner who understands how it can be implemented to suit your company's needs, then roll it out in a timely fashion.

Do many enterprises have the internal capabilities to implement AI themselves?

It's an evolving picture. We are seeing a number of our customers develop AI practices, typically as a part of either their existing automation or analytics teams but they are still in the minority. Most customers choose to work with partners to gain access to the mix of skills they need. Because the field is changing so fast, most need help to stay ahead of the competitive curve, and that is a big challenge.

In a world that is moving faster than you can measure, the things are that really important to you are the skills of the team you bring together – a partnership of skills – and a team that can co-create and forge a collaborative approach to transform your applications in ways that match the needs of your marketplace and your people. It's the intelligent approach to AI.

I think it's important to start talking about AI now. Start thinking about how you can implement AI to compliment your existing systems landscape. AI can give you short-term benefits, and over the long-term you can do more and more. That's why having a good partner is so important.

Do the emerging home assistants which use AI influence our understanding of the technology?

Yes. The easy way to explain AI is by referring to how it's now being used in people's homes. And people have been using AI for quite some time in their everyday lives. Every time anyone types a search into Google, the search engine uses AI text analysis and indexing techniques to come up with the most appropriate result for you. Now, you've got the Amazon Echo which provides a natural language interface. It's a machine that understands language, which is another key capability of AI. It then translates what you say into a search, sends it off to an application, and then brings it back to the user in a natural language response. On your mobile phone, there's Siri, or Cortana on your PC. They are AI based speech recognition capabilities.

Are businesses ready to use AI?

I think everyone understands that AI is here and is being deployed in a range of ways. Stories about how it's being used are common in both the mainstream and business press. Most of the conversations we're having with customers is about the fact that we're at the beginning of a new wave of transformation. AI is starting to be useful and applicable to business contexts.

There is more data in the world now and at a larger scale. To gain insight from that, you need ways of analyzing all that data and interpret it so you get useful insights. AI is the only way to do that. The data sets are too big for humans to analyze. So, you have lots of data and businesses know that they need to understand it; they want to get insights from it. There's been a huge amount of investment by big players, including Fujitsu, into creating algorithms that can be applied to real-world problems. Importantly, there is now the right amount of computing horsepower available via cloud platforms at a good price. That fact allows you to start applying AI in a cost-effective way.

We're right at the beginning of people working out how AI can be applied to their business problems.

Where can I use AI profitably in the short-term?

There are an awful lot of different capabilities, all of which are at different levels of maturity. A number have been pioneered by the financial sector. For instance, the concept of chatbots, voice and text input are being used extensively on service desks. They're being trained to answer common queries. So, before a user ever connects with a human, the front-end triage is done with AI. That means problems can be solved and fixes offered via speech recognition. It's being rolled out in a lot of sectors now, including the public sector.

Voice recognition is a very interesting opportunity. Some banks are starting to use it to do security checks when people call into their service desks. So, it stores a file with your voice on it – after answering the right security questions – and then it can recognize you the next time you call in. That's being integrated into the business process in a completely seamless way.

Is Fujitsu working on projects like that with customers?

Yes. For instance, we are running a trial for 2000 users where a chatbot is providing the front-end contact on one of the service desks we provide. So, when someone's printer, for instance, isn't working, they call in. The chatbot is trained to ask the right questions to find common faults. It also knows simple fixes that can be communicated to the user. It can even ask clarifying questions to sort through specific fixes. If the problem is too complex, then the call is routed to a human.

Is that going to become even more sophisticated?

No question about it. There will be more and more chatbots and AI interfaces as businesses get more confident using them. I recently talked to someone from an insurance company, and they're using chatbots to sell insurance. It asks the right questions, such as; how old are you, have you got medical conditions and so on, and then routes you to a quote.

What are the business benefits?

The obvious ones are: less cost, more efficiency and effectiveness. We are seeing AI be used to free up people's time to focus on higher value work. And, the chatbots work 24/7 and never take a break. So, if you take the service desk examples, you can reduce the number of people needed to operate whilst improving the service that end-users get.

Sounds too good to be true?

It's true. But AI is not magic. For pretty much every application of AI, there is training required. You must train the AI properly. You need to set that up correctly in the first place and monitor behavior. We did a project where we trained the AI to check people's signatures for fraud. The technology learned how to recognize differences in signatures based on examples we provided it. You can do reinforcement learning where you give the AI new problems and see what it comes back with, then tune the learning so it works better. Training is not a one-off activity. Longer term there is likely to be a job in the market that's solely focused on training AI.

It all sounds very technology focused, what about the business strategy?

Like I said at the start, this is about business. You start with your business needs. AI is all about improving outcomes; delivering business tangibles; asking, 'How can I improve the outcomes of a business process?'

So, start with the outcome you want first?

Yes, It's the classic way of looking at business change. In truth, AI should be related to specific business problems and generating revenue streams. You need a team that can link the tech to the business. People who understand data. Every project that is an AI project is also a data project, so you need good quality analysts. You need good technologist who understand the products, and can code and train the AI.

Most importantly, you need business domain expertise. That's the only way to be productive; bring those three areas together into a cross-functional team so you can understand the art of the possible. Match you where you are on the adoption life-cycle to where you want to get to. Work out if you need to build your own capability or bring it in. Fujitsu helps you create that team. Our experts, your experts all work together to co-create specific solutions and strategies.

It's a total, creative approach that's underpinned by data science. Do that and you will be able to work out how AI can help you achieve your business objectives. It's a co-creation team. It's the only way forward. The intelligent approach to artificial intelligence.

The New Reality is Mixed:

Augmented and Virtual, Technology is Changing the Way We Do Business – and See the World

There's been a lot of interest in both Augmented Reality (AR) and Virtual Reality (VR) within the business world recently, which is not surprising. Both bring huge benefits to all kinds of businesses, and a whole host of tasks which will always be done by real people, from equipment repairs to sales to imagining what a new building will be like once it's been constructed. AR and VR can help do all of them quicker, cheaper, more efficiently and with greater safety. And it's not AR or VR, it's both – 'Mixed Reality'.

James Bambrough
Head of Digital Applied Technologies

These technologies aren't new. The first VR experiences were around in the 1990's in the games industry. They needed complex equipment and a large space to operate in. Nowadays, games console manufacturers include VR headsets as an integral part of their systems. Designed to be compelling, engaging and interactive, they appeal to our enjoyment of gaming and interactivity. They immerse players in new worlds. The point is, in a word, "fun"! AR also made its significant leap forward in the gaming and leisure space. Users can use their mobile phones to augment the environment in which they happen to be with new information that's overlaid onto everyday objects: for example, showing detailed information for an object in a museum, or collecting characters hidden in places in your local street!

Historically, technology was developed for business use and then evolved to the public. That's true of email, internet chat and smartphones. But with AR and VR it's the other way around. The multi-billion-dollar gaming industry understood from the start that truly immersive experiences hooked players. They create new worlds that engage people and encourage them to spend money or work harder. That's why Facebook spent $2 billion buying Oculus. It's why Google and Microsoft are investing heavily in both AR and VR. It's not just the 'gamification' of commerce (which is gathering pace quickly) it's also the potential both technologies bring to the world of work.

Both technologies have developed to the point where they can play a crucial part in the digital transformation journey of any organization. They can make old tasks better, more interactive, and open-up opportunities for entirely new ways of working, selling and optimizing people's time and talents. But that's not surprising, AR and VR were forged in the toughest business there is: entertaining people, especially the young.

Making the most of time; human time

Time is expensive. And you can measure it in business by employee hours against the results you get. Businesses strive to maximize the output per hour, and have always looked to technology to do that. In the past factory lines have evolved from manual process to automated robotics supervised by experts. Today, more and more organizations are looking to Robotic Process Automation to do rules-based routine tasks. It's always been that way.

People are not completely replaceable, thankfully. They have intuition and talents that enable them to become experts. They are dexterous and are able to interact with complex tasks and equipment in ways that robotics cannot yet do in many areas. But, they sometimes do not have all the answers, and either rely on external sources of information or intuition to achieve a solution to an issue. If we could augment the world that humans are

AR and VR enable us to try out new ideas: it's a great way to experiment in a virtual world without spending a lot of money on facilities and resources.

interacting with to provide vital information, or instructions on how to complete tasks, then time can be saved. In the same way, using VR we can immerse a human in an environment to carry out training or to familiarize them with spaces or tasks without requiring them to leave their office.

Virtual world, real skills and decisions

VR is still in its infancy when it comes to being used within organizations. Architectural practices and construction firms are pioneering its use to save time and, literally, build the future. It used to cost a lot of money to build scale models of complex construction projects. And they were just that – models. You couldn't get inside them to find out what it would be like to work in the space, or live in it, or even sit in a specific seat in a completed, high-tech football stadium. VR enables those environments to be transformed from blueprints to immersive worlds that bring the future to life. You can walk through your new offices, see how the layout suits your employees and discover collaborative potential in social areas before any physical foundations are laid.

Automotive companies are starting to offer customers the chance to personalize their vehicle, and then sit inside it, long before it even gets close to the production-line. That helps customers make the right choices, and helps sales people up-sell and cross-sell to extract more value from every customer interaction. BMW is pioneering the approach right now, and many other marques are following suit. By doing this, a customer is not just looking at a generic vehicle on a page, they can be 'sat' in their vehicle to deliver a far more engaging experience which, by being immersive, enables them to buy-in to the purchase on an emotional level. That's a very powerful sales tool.

Car manufacturers are also using it to train their mechanics on how to take an engine apart, and then put it back together again. That's always been the best way to find faults and fix them. But doing it in real life took time and lots of resources – i.e. many engines in a big space. But, now trainee mechanics can do it all in a virtual space.

So, the technology is helping to deliver digital transformation for both processes and people. It's also creating new opportunities by engaging our minds and helping us to think more clearly about how the present can be turned into the future. AR and VR enable us to try out new ideas: it's a great way to experiment in a virtual world without spending a lot of money on facilities and resources. And as Ralph Waldo Emerson put it, 'All life is an experiment. The more experiments you make, the better.'

The key is human knowledge

AR is showing the most immediate potential for business value right now. And it's doing it in the key area of human knowledge. Every organization has a well of expertise that sits in the brains of its people. When something needs to be fixed, you send out someone who knows how to fix it. That sounds obvious, but there is a growing crisis of knowledge in many sectors such as utilities and manufacturing – as people retire, their knowledge goes with them. Unless an organization works hard to enable older workers to share their skills and experience with younger workers, the value of that expertise flows out of the business.

AR is a way of capturing expertise and sharing it with new workers, augmenting their learning at the same time as delivering productive skills where it counts the most, out in the field. I'm talking about head mounted displays that help engineers see how something works, where a fault might be, record temperatures or flow-rates, and deal with situations that might potentially be hazardous, in a safe and secure way. These devices leave hands free to engage with the world you are augmenting.

Link AR to IoT technologies and you get a flow of data from the environment you are working on that helps in both the short- and long-term contributing to efficiency and increased outputs. It sounds theoretical, but it's completely practical. I worked with a customer that had to deal with a widely-dispersed set of remote technologies with a workforce that had experienced a high rate of retirement amongst its experienced engineers. A relatively new engineer would travel to a remote location, find that the machinery in need of repair was old, and then travel back to consult with a retired colleague who knew how to fix it.

We discovered that only one-in-three repairs could be done on the spot. It was costing the company a lot of money in time and delays. Customers were not happy. By using an AR headset, the details of the machinery, and the method of repair, could be stored digitally. Once the engineer arrived, he could be shown step-by-step instructions about which screw to undo, and which bracket to loosen, whilst receiving real-time data about temperatures or flow-rates of any substance within the machine. The repair gets done first time, the engineer learns how to do it safely, and everyone is happy.

You can apply that to training people to repair power lines or sub-stations or even change headlights on different makes of cars (they all have widely varying methods), and the result is that more work gets done, customers get what they need, and knowledge is broadened and deepened.

Gather the knowledge once, use it many times

The real effort goes into gathering the knowledge and turning it into useable data within an AR or VR context. Yes, that takes time, and many companies are concerned by the prospect, but it's worth it in the end. At Fujitsu, we're helping companies create the conditions under which they can bring together the valuable wisdom that resides within their people and enabling them to digitalize it. The simple rule is: put the creation of the AR content into the hands of the user – don't rely on having an army of developers creating content where they have little or no context – use the experts.

You might think that people would be wary of sharing their knowledge, but they like doing it. It becomes a game. People compete to share the skills they've learned in the real world and they are gratified when they get feedback about how useful it was. So, the knowledge is captured in the field, centralized and then fed back into the AR solution – you effectively crowd-source your knowledge using an immersive and interactive environment.

When you mix realities, you get new opportunities

We're on the verge of a new era in the way we work. Automation is transforming the routine; AR and VR will transform everything else. It's a totally human-centered technology. You are, literally, at the center of it. It helps your brain and body do more, experience more, and learn faster. Learn by doing. It's immersive, satisfying and, dare I say it, fun. What more could you ask for?

Talk to us about how we can help you.

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