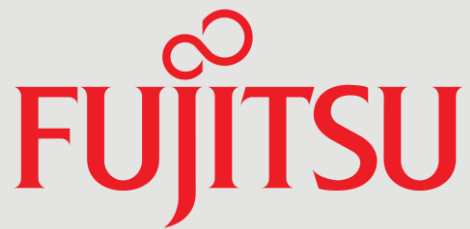




Inside Track Research Note

In association with



Digital Transformation Practicalities

Lessons from Leonardo

Freeform Dynamics, 2018

About this Inside Track

The insights presented in this document are derived from independent research conducted by Freeform Dynamics. Inputs into this include in-depth discussions with IT vendors and service providers on the latest technology developments, along with intelligence gathered from mainstream enterprises during broader market studies.

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In a nutshell

‘Digital transformation’ might sound like something that organizations like yours have been grappling with for as long as you can remember. But the pace of change has increased dramatically, with a seemingly never-ending variety of technologies and projects that promise to act as competitive differentiators and boost the bottom line.

Technologies such as artificial intelligence and machine learning, blockchain, ‘big data’, in-memory and GPU-based analytics, right the way through to the Internet of Things (IoT), are all said to play a part in the new wave of digital transformation. So what should be your priorities, and what considerations should be taken into account when embarking on any kind of digital transformation strategy, large or small?

In this paper we’ll provide a pragmatic view of what digital transformation is (and what it is not), ask what it means for IT planning and the IT infrastructure – whether on-premise or in the cloud – we’ll do this with reference to a digital transformation suite of offerings from one of the household names in the IT industry: SAP. While not the only solution in town, it provides a convenient illustration of how success with digital transformation depends on bringing a blend of technologies, best practices and services to bear on the problems and opportunities.

The latest trends in digital transformation

The world is changing, and it’s changing faster than ever. Markets are being continually disrupted as a result of advances in technology and communications. If you’re going to keep up - let alone get ahead - you are likely to have to deal with disruption within your own business, and how you handle that disruption is critical.

Unfortunately, not everyone is ready for change. Some people and organizations find change uncomfortable, stressful, or even pointless. But time and again we have seen that those that are able to adapt to change – and indeed thrive under the constant pressure to change – are the most successful. Put bluntly, being agile is just as important as simply being efficient.

Many traditional organizational structures, processes and systems – though familiar, proven and well established – have increasingly fallen short of meeting the needs of today’s highly connected and fast-moving world. The process of implementing such changes effectively is known as digital transformation. As the phrase suggests, this is about exploiting modern technology and communications to transform one or more key aspects of your business to achieve a state of ‘digital readiness’.

However, a discussion of digital transformation cannot be had in a vacuum, where the underlying IT infrastructure is largely ignored, while all the attention is focused on shiny new technologies such as artificial intelligence, machine learning or even blockchain. Even in this brave new world there are some fundamental principles that remain crucial.

It might not seem as ‘on trend’ to talk about hardware, middleware, networking and storage, but of course these have not gone away nor will they. We’d argue that digital transformation in fact places even greater demands on these trusted layers of an IT infrastructure stack, because effective digital transformation needs to be underpinned by infrastructure that runs 24x7, is reliable, scalable, secure and agile.

Another option, familiar in relation to more mature technology areas, is to use integrated appliances, or at least stacks built to a pre-defined blueprint.

Digital transformation is really just the latest incarnation of business transformation, and as such, the top-down business perspective is still of critical importance.

By all means start with a fairly small, relatively inexpensive and reasonably risk-free project, if you can identify one. But at the back of your mind it is worth retaining the bigger picture.

The underlying IT infrastructure needs to be industrial strength, have around-the-clock support if anything should go wrong, and work together seamlessly. There is a range of options, of course. Some go down the DIY integration route where they choose servers, storage, networking and middleware from numerous different vendors. In the early days of new technology options moving into the mainstream, this may be your only option.

The drawback, however, is that there can be a considerable amount of manual configuration work before the stack is up and running, and if something goes wrong it's often hard to pinpoint whether it's the fault of your server, storage, middleware or networking vendor! It can also then be challenging to keep everything updated over the likely extended lifetime of the system.

Another option, familiar in relation to more mature technology areas, is to use integrated appliances, or at least stacks built to a pre-defined blueprint, and the good news is that these are now starting to appear to support some of the emerging/advanced technologies we mentioned above. There might be a few outlying use cases where these are not ideal – niche requirements such as algorithmic trading systems, perhaps – but for nearly every other workload such systems can be considered. In fact, because systems based on such integrated designs take care of the interplay between servers, storage, middleware and networking all in one architecture, they have the potential to free up your IT staff's time to focus on activities that add higher value. Digital transformation – in its many forms – being just one of them.

Getting started

Should a digital transformation initiative include all of these technologies in some brave new infrastructure platform that could take years to implement, by which time some of those shiny new technologies may have been surpassed by something even more powerful, secure, scalable and agile? Probably not. Digital transformation is really just the latest incarnation of business transformation, and as such, the top-down business perspective is equally if not more important.

So where is a good place for you and your organization to start?

The usual phased approach is recommended here, with technology developments being used to generate ideas on new ways of doing things, but purchasing decisions made only after the identification of a clear business need and investment case.

Our research suggests that many organizations do indeed approach digital transformation using this kind of phased rollout. For example, they might start with a rethink of their procurement systems and business processes, and then move on to an analysis of the customer experience and how it could be improved (or vice versa).

Alternatively, they might look at the advantages of a new sales force management system, or a more technology-enabled approach to supply chain management.

But remember the big picture backdrop

At the risk of now contradicting ourselves (bear with us), while it is a good idea to start with what you might call low hanging fruit, it's always a worthwhile exercise to see things 'in the round'. By all means start with a fairly small, relatively inexpensive and

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reasonably risk-free project, if you can identify one. But at the back of your mind it is worth retaining the bigger picture. How will that project affect other systems, applications and business processes over time? Does it get you closer to where you ultimately want to be as a business, or does it represent an investment dead-end? What you really don't want to end up with is a number of improved processes that are all completely siloed from an IT infrastructure point of view, each requiring different skills (and different support phone numbers should something go wrong!)

It certainly makes sense that the various components that may gradually come together to underpin your digital transformation adhere to certain standards, so that they can work together as and when they need to. On that basis a suite of digital transformation technologies is a possible option – particularly one that is modular, and the modules of which can be used independently or together.

Factor in cloud, but think hybrid and dynamic

While some exponents of cloud would have you believe that everything is moving into the ether, this has certainly not been the case so far. All but greenfield sites know that on-premise computing will be a fact of life for many years. But do not be fooled that all companies want to move to the cloud lock, stock and barrel, if only they did not have any constraints around legacy systems, security or culture – quite the reverse.

What we have learned from research studies and from conversations with CIOs and chief architects is that the most pragmatic approach is to be completely cloud agnostic. Indeed, one of the requirements that comes through consistently is that applications and workloads may move around over time. For example, prototyping of a new application might take place in a private cloud, there might be a pilot run in a public cloud such as Amazon Web Services (AWS), but when pressed into production the chosen execution venue might be on premise: there are many factors that you will want to take into account.

Sure, more and more workloads, especially those being created today to meet new business requirements in support of new lines of business or business processes, are indeed moving to the cloud. But that ongoing reliance on a large body of older, on-premise systems of record means that nearly all organizations are running in some kind of hybrid mode, with a mixture of on-premise, as well as private and public cloud.

For that reason, one desirable aspect of a 'digital transformation suite' is that it is possible to run at least some of the modules in the cloud, on-premise or in hybrid mode. But whichever execution venue is chosen, we would reiterate that a digital transformation suite should feature a scalable, flexible and open systems hardware and software layer that is robust, efficient and automated as much as possible from a provisioning and management perspective.

A suite to support digital transformation?

There is no such thing as a fully-integrated, off-the-shelf 'digital transformation suite'. We'll say that from the outset, because digital transformation is not something that you can buy from one source. To do it right you need to have a root-and-branch look, not just at your technology, but at business processes and even the company culture. That isn't something you can simply buy today and implement tomorrow.

One company that has recently attempted to put together a modern suite for digital transformation is SAP.

Nevertheless, as is the case with the underlying IT infrastructure stack – servers, storage, networking, middleware – it’s desirable to know that the different pieces of the puzzle will eventually fit together, even if you are only adopting some of them now. No one wants to spend many hours on a 500-piece jigsaw puzzle only to find that the dog must have eaten the very last piece!

One company that has recently attempted to put together a modern suite for digital transformation is SAP. Granted, it’s a mixture of existing and new software technologies with some additional services capabilities delivered by SAP or its partners, but it serves as an illustration of some of the things you may look for as you start your own journey.

Introducing SAP Leonardo

SAP has developed what it is calling a ‘digital innovation system’. In practical terms it’s essentially a suite of technologies and services that can come together to help support new technology initiatives, on the road to digital transformation.

But what exactly is SAP Leonardo, and what might an offering like this from SAP and/or some other strategic partner do for you and your business?

SAP says Leonardo is a holistic system for the SAP Cloud Platform. In fact, if you dig below the surface of the SAP Leonardo messaging you’ll find that many elements of Leonardo can run in public clouds too, including Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform, or in private clouds on-premise.

SAP has been vocal in the past about its view of the potential of ‘design thinking’. Design thinking is a formal method for practical, creative resolution of problems and creation of solutions, with the intent of an improved future result. It is a form of solution-based, or solution-focused thinking – starting with a goal (a better future situation) instead of solving a specific problem. SAP says its design-thinking approach is then backed up by the modules within Leonardo, to help companies improve their digital infrastructure and hence streamline business processes.

We’re not fond of the term, but SAP says Leonardo begins with what it calls ‘solution ideation and vision’: this is the goal of putting design thinking into practice. At its global Leonardo Centers, SAP staff look at how design thinking and innovation could help your organization.

SAP emphasizes that the greatest success from such projects tends to hail from sessions that involve not just technology practitioners at various levels but also people from the business itself – who may know less about the infrastructure but are often likely to have ideas about how business processes and efficiency could be improved. It’s not a new idea – consultancies have been advising on this for years – but it is one worth reiterating. And it’s particularly useful when the party facilitating the process owns much of the technology layer and can use it to not just illustrate the ‘art of the possible’, but also follow through and be accountable for the components enabling the working solutions that are ultimately built and deployed.

It also helps if they can offer a range of financial options on how to pay for the solution and its ongoing support and operation.

Next, with a technology called Leonardo Build, SAP is able to start prototyping some potential solutions, which can then be iterated and refined. After that, Leonardo

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involves an integration blueprint: this includes the creation of a technology roadmap, the identification of infrastructure dependencies, and the remediation of risks. In the fourth stage, SAP's Leonardo team can help you to build the business case. This means creating the business case itself, but also testing it and refining it, to ensure that it really is going to provide a return on investment and create business value.

The point we are making is that Leonardo should not be thought of simply as a set of integrated technologies that can underpin a kind of digital transformation. There is also the Leonardo IT services element that helps organizations understand what, where and how transformation should begin, how to ensure it really is going to deliver business value and how to test that business case.

As for the individual elements, the key ones are: Design thinking; analytics; big data; blockchain; data intelligence; the IoT; machine learning and the SAP Cloud Platform.

As discussed, your route to digital transformation might start with just one of these and then move to other disciplines and technologies, or you may choose to start several in parallel. Also, while SAP highlights the integration with its SAP Cloud Platform, many of the underlying technologies can be run on-premise if you prefer, depending on the specific module. Again, the best execution venue might change between prototyping, early models and production.

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Finally, there are 'accelerators' that are designed and pre-configured for specific vertical industries: chemicals, consumer products, discrete manufacturing, retail, sports and entertainment, travel and transportation, life sciences and also utilities (SAP says it will add more industry segments as it goes along, such as automotive and perhaps telecoms).

The bottom line

There are many options when kicking off a digital transformation project, in terms of scope, choice of technology, execution venues and to what extent you and your organization wish it to also include large-scale business process change. The purpose of this paper was to hopefully put some of the various approaches in some context, and of course we used SAP's Leonardo initiative as an example of what a modern digital transformation suite looks like.

We also talked about the role of various emerging technologies and the evolving role of cloud, and the big message here is that while some options might be new to you or your organization, the fundamental principles of IT infrastructure design have not magically disappeared. If anything, you want the architecture and IT 'stack' to be even more robust, more secure and more scalable and agile than ever.

We'd reiterate that digital transformation cannot be achieved through the purchase of off-the-shelf technologies alone.

Ultimately, we'd reiterate that digital transformation cannot be achieved through the purchase of off-the-shelf technologies alone. It requires the coming together of modern software, middleware and hardware, best execution venues, as well as business process optimization and even adjustments to internal skills and corporate culture. The overriding imperative – and our bottom line advice – is to always keep the big picture in mind so you don't suddenly discover that you can't find the last piece of that 500-piece jigsaw puzzle.

About Freeform Dynamics

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