



Transform faster to accelerate innovation

How integration uses
existing IT investments
to make businesses more
agile and innovative

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Introduction

Innovation has always been disruptive; the invention of the automobile destroyed the business model of the blacksmith, and steam engines made it cheaper to import cotton textiles from India than to spin them in the mills of northern England.

What is new about the digital phenomenon of creative destruction is its speed and fierce unpredictability. Digital change comes at a pace that demands fast decisions and flexible technology. It is messy and disruptive, yet businesses that shy away from change will struggle to survive. Digital disruption wiped out more than half the Fortune 500 businesses listed in the index at the turn of the millennium, and that turbulence is far from over. In what it calls “a gale warning” to business leaders, [one analyst](#) predicts that, over the next 10 years, roughly half of S&P 500 businesses will be swept away or rendered obsolete.

The message is loud and clear: **innovate or die**. This is true for all businesses with complex IT infrastructures, built up in response to wave after wave of technological disruption.

This complexity can be an obstacle to innovation, yet potentially, it is a great source of strength. The fact that an established business can never morph into a start-up with a leaner IT profile, does not mean that their existing investments are wasted. One of the themes of this white paper is to demonstrate how existing IT investments can be redeemed through integration – and turn what is seen as an Achilles heel into a source of renewal, creativity and revenue.

Innovate or die is a stark message, not a choice. The good news is that businesses can turn the threat of change into a positive – through innovation.

The changing face of innovation

Businesses know they cannot stand still, not least because their customers demand and expect almost constant innovation. Markets are impatient for new services, new products, better and more inventive customer experiences, delivered elegantly across a multiplicity of channels. The speed at which a business brings its innovations to market is increasingly a part of what makes it innovative in the first place. Businesses that are too tentative to innovate lose out to more agile rivals.

This is why digital transformation is far from over, with global spend expected to reach almost [\\$2 trillion by 2022](#).

In a recent survey, [Unlocking business acceleration in a hybrid cloud world](#), McKinsey took a snapshot of where businesses believe they are in their digital journey. The report confirmed that CIOs have gotten the message about the need for innovation. When asked to list their top three priorities for their business, 71% of CIOs chose “Improved agility and faster time to market” – only “Revenue acceleration” (88%) was more important, while “Cost reduction” (47%) came in third.

CIOs expressed frustration that their cloud initiatives had not led to the agility outcomes* they had expected. The survey suggests that cloud adoption is not correlated to agility. CIOs that had moved a significant proportion of their workloads to cloud platforms received as little improvement in agility as businesses that had lagged behind in cloud adoption.

What is going wrong?

McKinsey notes that businesses – and certainly wider management – have tended to regard the cloud primarily as a means to cut costs by dismantling license-based software infrastructures. However, cloud migrations in and of themselves do not create innovation.

True agility comes from integrating cloud applications with each other, and with on-premise systems and data sources.

Businesses fear complex and expensive integration projects – and the McKinsey survey suggests that this is leading to some poor decision-making. More than three-quarters of CIOs (77%) were frustrated that this fear of complexity was constraining investments in IT to standardized, lowest-common-denominator solutions. This is self-defeating because modern developers need to be free to choose combinations of languages, libraries, and frameworks that enable accelerated delivery – and have these come together confidently in a single innovation platform.

It is to the nature of such an innovation platform that we must turn next.

A platform to innovate

In the age of the Digital Consumer, startups have a lot of advantages. Unencumbered by legacy IT and organizational structures, they are by their very nature more agile.

Created to disrupt the market, innovation is what propels them forward. There are no hierarchies to slow down the decision-making process, which makes it easier for startups to experiment, to get it wrong, to change direction – at least until the funding dries up.

It is important to remember that most startups fail and that startups that completely reinvent a sector – like unicorns Uber and Airbnb – are very rare indeed.

Not all start-ups destroy, but successful start-ups all erode. The top 25 global consumer companies account for roughly 50% to 40% of sector sales, yet they have driven just two to five percent of global growth over the last seven years – almost all of it has been ceded to start-ups.

However, the battle is by no means one-sided. What startups do not have is the experience, heritage, data and organizational wisdom of established businesses. Integration helps businesses overcome digital fragmentation, so they can do what they are naturally good at already.

One of the most remarkable aspects of the Digital Revolution is its unpredictability, its “unknown unknowns.” The classic example is Facebook, which Mark Zuckerberg built as a dare to irritate the bureaucrats at Harvard. Fewer than 10 years later, the site had attracted one billion users.

Businesses need not fear unpredictability if they have built in the agility required to take advantage of it. A great example of a business leveraging the unexpected is that of a UK-based public transport company that wanted its customers to be able to book tickets through third-party apps and websites. This goal was achieved by migrating its key systems to the cloud and then exposing its ticketing services as public APIs. However, its cloud-based ticketing platform proved so successful (and scalable) that the company now offers it as a standalone ticketing service for other transport providers, thus creating a new line of business and revenue stream.

This was never a strategic goal, but the unexpected outcome of a well-executed integration project and a single smart API – the building block of innovation.



Building innovation: the role of APIs

Instagram and WhatsApp were built from almost nothing: Instagram had just 13 employees when it was bought by Facebook, while WhatsApp still has only 55. What made this possible was the power and virtuosity of APIs, which enable developers to build new apps easily and quickly from existing disparate technologies. APIs achieve this by inserting well-defined, stable and documented “entry points” into data sources, application systems and business processes.

They are not a new concept; APIs have been around since the 1960s, but they have become so pervasive and all-important that Forbes declared 2017, “The year of the API economy.”

There is little we do in our digital lives that is not, in some way, dependent on APIs. Uber would not exist without the power and simplicity of MAP API, the interface that connects it to Google Maps. Travel apps such as Kayak or Expedia aggregate scheduling and price data from a vast number of airlines by connecting to their APIs.

These examples illustrate how APIs are enabling innovative, new projects and business models. Without APIs, digital innovation simply cannot happen.

This has thrust APIs center stage, and businesses no longer look at APIs as the “glue” that holds all the important stuff together, but as strategic resources in their own right. The Google API is a case in point: between 2015 and 2019, [Uber paid Google \\$58m](#) for access to its mapping technology.

Perhaps the pendulum has swung too far. The re-evaluation of APIs has created the powerful myth that interoperability between applications is now plug-and-play, and that businesses no longer need integration platforms.

The opposite is true: **the more businesses rely on APIs to build innovation, the greater the need for integration to deliver those APIs in an agile, governed way.**

We will examine this in our next section.

Delivering innovation: the role of integration

APIs were invented to address the problem of getting disparate systems and technologies to talk to each other. This requires orchestrating services and functions using integration. But business leaders building APIs are often unaware of how integration technology can make this easier and faster.

APIs are built in response to a unique business case or to satisfy a specific customer requirement, and every development team has a different way of doing it. The result is that the APIs exposing the price and scheduling data of airline X will be different from the APIs developed by airline Y to do the same job. For the likes of Kayak or Expedia, who need to use APIs from dozens of airlines, these incompatibilities present a huge obstacle to creating a consistent customer experience in their apps.

You can custom code to make these incompatibilities go away, but that adds a layer of cost and complexity to APIs that were created to make businesses more agile. For a simple API, you might only need a single connector to access a back-end system. But more complex APIs can involve accessing legacy or custom systems, transforming and mapping disparate data structures, and performing advanced routing and mediation—the kind of work an integration platform is designed to do. For APIs to be most effective, you need the power of an integration platform.

The confusion between APIs and integration is understandable because they are two sides of the same coin, according to Gartner VP Massimo Pezzini. He says:

“APIs and integration technology are intimately correlated. Integration technology reduces APIs’ time to value and APIs greatly facilitate certain aspects of integration.”

There is growing awareness of the need to create more synergies between APIs and integration. In a Gartner survey¹ of API usage, the integration between various platforms, applications and systems is cited as the main business objective for API optimization.

Integration equals inclusivity

Creating APIs within a constellation of platforms, applications and systems, understanding how they are used, and constantly adjusting them to meet the needs of users can be a long, drawn-out process. But API management platforms accelerate innovation – and not only because the delivery of APIs is sped up.

API management weeds out the inefficiencies of duplication that persist in businesses that juggle multiple API projects and development teams. Like any business resource, APIs need a formal strategy. Developers are looking for uniformity in how they test, document, deploy, version, update and retire APIs – and API management imposes these levels of governance. But control is often the antithesis of innovation; how do you balance these competing needs?

What makes startups good at innovation is that every project or idea is a collaboration. This openness can be much harder to achieve in established businesses, where innovation is stifled by structural siloes built up over decades of IT investment.

Integration restores the power of those disparate IT investments, from best of breed applications to cloud apps and databases, via legacy and even mainframe systems, freeing up the “unknown unknowns” of data and enabling new opportunities for innovation to present themselves.

Of course, innovation is created by people, not by systems, and this points to another facet of the modern integration platform which Gartner² defines as follows:

“A framework of on-premises and cloud-based integration and governance capabilities that enables differently skilled personas (integration specialists and non-specialists) to support a wide range of integration use cases.”

Gartner makes a point of including non-specialists. In its definition, the purpose of integration is – partly – to make its own processes more inclusive and allow non-technical users a degree of initiative. This makes sense because innovation cannot “belong” to just one part of the business: integration must also mean that different skills and points of view are brought together because siloed thinking is as inimical to innovation as siloed data.

This inclusivity is driving (more) unprecedented change – that of the B2B ecosystem.

¹ API Usage and Its Role in Digital Platform Growth

² Innovation Insight for Hybrid Integration Platforms

New integrations, new truths

Digital hyper-connectivity is forcing businesses to think out of the box – because technology has crushed the box itself. Businesses are beginning to re-imagine the adversarial context in which they have always operated. The creation of ecosystems is shifting the emphasis away from competition towards collaboration. Businesses do not always have to dominate. Increasingly, delegating control through a network of smart partnerships is accepted as a source of value.

A multinational organization that has dominated European manufacturing for more than a century recently opted to embrace a more collaborative business model.

It needed to leverage the immense potential of its IoT capabilities with a platform that would connect this “real” machine-data with data from cloud and on-premises applications. Given the ambitions the industrial giant has for its IoT platform, it might have been expected to build a proprietary integration platform. It certainly has the clout and experience to have gone down that route. However, the multinational realized that a digital future is not best served by “analog” thinking. Prizing agility over control, speed to market over prestige, it expanded its ecosystem by partnering with Software AG as the most effective way to achieve its ambitions.

Integration is driving the rise of B2B ecosystems—customer, partner and supplier networks—which, in turn, will usher in the next wave of technological change and business innovation.

What could such a future look like?

The brave new world of ecosystems

Integration transforms the relationship a business has with its trading partners and supply chain.

With B2B as a built-in capability within your platform, you can integrate partner transactions and backend apps within a single runtime, giving you full visibility across all your B2B activity. Automation will greatly speed up on-boarding, while integration will also allow you to set rules to control and automate complex transactions. The big win here is as much about reliability and trust as operational efficiency.

You want to be agile and competitive, and lead your sector in innovation, but that counts for little if you cannot leverage your innovations to build trust with your business partners.

B2B ecosystems are a natural extension of that trust. An astonishing everyday example of this is the [collaboration between Amazon and a direct competitor, the US retailer Kohl's](#), whereby Amazon customers can now return unwanted goods to any of 1,105 Kohl's stores. At first glance, this seems highly counter-intuitive, especially for Kohl's who have to divert staff away from selling its own wares to process returns on behalf of Amazon. However, the collaboration (potentially) solves a problem for both retailers: that of dwindling foot traffic for Kohl's, and for Amazon, the lack of brick-and-mortar where products bought online may be easily returned.

Digitization is breaking down traditional barriers between competitors and industry sectors; Amazon has always been at the forefront of this momentous shift. [McKinsey speculates](#) that the 100+ value chains and industries that constitute the distribution of services and goods in the current global economy could collapse into just twelve large ecosystems. Such a scenario would lead to value creation on a scale that is historically unparalleled with McKinsey anticipating as much as \$1 trillion in additional profit over the next five or six years.



While the analyst admits these figures are at best an intelligent guess, it stands by its conclusion that B2B ecosystems, augmented with APIs powering digital transactions, will be massively transformative.

Digital pioneers, such as Amazon, are making this happen in the here and now. Telecoms are leaders in connectivity and so it comes as no surprise that they are also in the vanguard of forging partnerships that reach beyond their sector. For example, a leading Australian telecom business created a solution for digital automated water management in partnership with Software AG – a key technology in a world where water is a scant and precious resource. This is a textbook example of a barrier-blurring ecosystem where the skills and resources of two sectors come together to transform the business operations of a third.

And so we have come full circle with integration. From connecting fractured IT, to re-connecting businesses with knowledge and experience that they did not realize they had, to sharing past and future insights – and have the confidence to do so – to help build rich, diverse ecosystems.

A virtuous cycle of innovation.

Conclusion

This white paper has used the generic terms “innovation platform” or “integration platform” almost interchangeably to describe the group of interdependent capabilities that businesses need to spur digital change. There is nothing intrinsically wrong with these terms, because without integration there can be no meaningful innovation.

Integration is the route to innovation. Businesses know they must embark on that journey, but perhaps not all have a clear strategy for the road ahead.

First and foremost, integration must mean pervasive integration: all data sources and all systems, from app to edge, on-premises or in the cloud, meaningfully brought together to create a culture of innovation that is coherent and exciting to everybody in the business.

This makes integration much more than a technological challenge: it is a strategy, a philosophical stance and mindset that become instinctive over time, and part of the DNA of a business.

The transformations we describe in this white paper require a deep understanding of the technological and cultural problems facing businesses that are determined to stay relevant. To do so requires both the power of code and the power of human experience.

At the same time, the names do not fully engage with how this innovation is achieved. What is lacking in the term “integration platform” is that crucial element of speed, urgency and dynamism which integration brings to the table.

What is lacking is APIs.

APIs have come of age: they are no longer a stopgap to the future, but a critical part of the digital transformation strategy of any modern business.

The success of such a business depends, to an increasingly critical extent, on how rapidly it can bring the APIs that underpin its innovations to market. What makes APIs fly – and gives you the agility to outmaneuver rivals with your innovations – is integration.

It is from this perspective that Software AG relaunched its integration capabilities as its [webMethods API Acceleration Platform](#).

Innovate or die was said earlier; but the takeaway of this white paper is much more optimistic: integrate and prosper.

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