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Paying the price for agile transformation

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GUIDING GREATNESS

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Introduction

Using agile techniques to deliver software development projects promises clear benefits. Most notably, these include a 62% higher likelihood of success compared to conventional, sequential or waterfall delivery methods¹.

Agile practices that make software delivery successful are informing enterprise-wide operating models. Increased product focus and rapid feedback cycles can give organisations a real business edge², so it's unsurprising that enterprises are turning to agility³.

In spite of this, a lack of understanding amongst senior finance leaders means funding the wider adoption of agile techniques can be an uphill struggle. This can leave agility confined to technology and perhaps one or two adjacent business units. Where this happens organisations do not develop a widespread culture of innovation and market responsiveness. Such companies fail to benefit from the improved business performance associated with agility⁴ and risk falling behind their more agile competitors⁵.

As well as facing issues of funding, organisations can also run up against resistance to new ways of working among teams at other levels. Nevertheless, the way transformational investments are funded and managed presents the biggest impediment to wider enterprise agility. This paper explores why paying for agility can be difficult and suggests ways to overcome the challenges.



Why is funding agile so challenging?

If the advantages of agility are obvious, why is it so hard to convince the finance department to fund it? There are typically two reasons.

First, internally, project accounting dominates decision making and forms the heart of the typical business case. This seeks certainty over costs by knowing the exact project scope and predicted long-term benefits. The finance department plays a central role governing the business case. This does not sit well with agile delivery approaches that embrace flexible scope in return for frequent, predictable releases to maximise market responsiveness.

Second, externally, accounting rules and regulations governing financial reporting require organisations to classify expenditure in ways that fit better with sequential, waterfall development methods than with highly iterative, agile approaches, where multiple activities are performed simultaneously.

In other words, the chief obstacle is the unwillingness to embrace uncertainty.



Differing project approaches to uncertainty

The reason project-cost accounting and agile do not make good bedfellows is, in a word, uncertainty. Project accounting and traditional financial governance processes seek to eliminate cost uncertainty or at least reduce it to the greatest extent possible. The rationale being that by removing uncertainty it is possible to exercise greater control and thus predictability over outcomes.

This is achieved by defining a fixed scope of work and predicting the associated costs of implementation and benefits well into the future. Frequently, this process is linked to annual budgeting cycles encouraging the creation of large, long-range, business cases which bake in rigidity⁶.

Eliminating cost uncertainty is attempted with upfront planning and a detailed work breakdown, but the further ahead the projections look, the bigger the errors are likely to be⁷.

The problem is, costs produced this way are often wrong, with the degree of error correlated to the anticipated duration of work⁸.

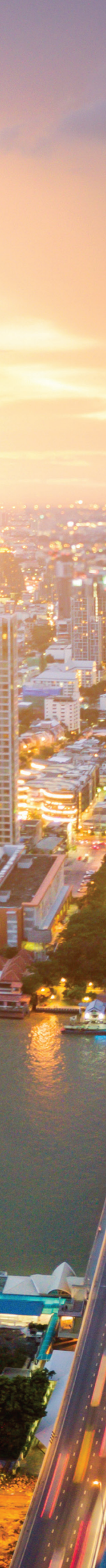
In addition, the likely benefits will depend on how well the project delivers what the market wants. Unfortunately, the traditional approach means it is only possible to test benefit assumptions, and thus eliminate benefit uncertainty, once the project is complete. If business conditions have changed or the underlying assumptions prove wrong at that stage, it's too late to change since the full project costs have already been paid.

In contrast, agile accepts that not all aspects of a project can be accurately predicted. Agile manages uncertainty by eschewing long-term estimations and testing the market through small, frequent releases that aim to confirm the benefit hypothesis in a smaller, more incremental, way.

Estimating error is avoided by providing only high-level estimates for long-range planning purposes, whilst focusing attention on techniques to increase the accuracy of short-range estimates covering only prioritised work scheduled for the near term.

Instead of attempting to predict benefits well into the future, agile uses small, frequent releases to test market responsiveness. More frequent releases provide more opportunities to test market assumptions and learn what users want. Invaluably this affords the ability to course correct before significant project costs have been incurred.

These fundamental differences in approach to project 'control' make agile hard to reconcile with the financial governance applied in most organisations.



The external regulatory and reporting framework

The way that accounting treats costs is the second reason that the finance department is not a natural advocate of agility. In the UK, the regulatory and reporting framework (Financial Reporting Standard 102⁹) within which all finance functions operate, requires expenditure to be treated either as an operating expense (opex) written to the profit and loss (P&L) account, or the cost of developing an asset (capex).

Capex improves the balance sheet whereas opex does not. For costs to qualify as capex, they must directly relate to the creation of an asset. This is important because the finance department wants to ensure that costs can be justifiably classified¹⁰ as opex or capex.

As the most recent regulatory reporting standard, FRS 102, identifies two separate phases of activity; 'research' and 'development'. Costs are treated differently in each phase.

All costs incurred during research must be written to the P&L as opex. The logic is that when carrying out research it is not possible to demonstrate that an intangible asset¹¹ exists and therefore it cannot be shown that it will generate future economic benefit.

Costs incurred during the development phase may be capitalised as contributing to the creation of an intangible asset, but only if the organisation can demonstrate the asset will be beneficial economically.

FRS 102 establishes six criteria against which costs are assessed. These are set out in Table 1, together with the corresponding ways that waterfall and agile systems demonstrate compliance.



TABLE 1

	Criteria to determine if costs can be capitalised	Waterfall means to demonstrate compliance	Agile means to demonstrate compliance
01	Technical feasibility of completing the intangible asset	Detailed design specification completed upfront before development starts	Agile, borrowing from lean manufacturing, seeks to explore multiple design options (set-based design) converging on a single solution at the last possible moment, making it harder to demonstrate feasibility earlier on
02	Intention to complete the intangible asset and use or sell it	An agreed requirements specification and associated delivery plan with each phase identified and planned	Agile breaks features into small, constantly re-prioritised stories explicitly to maintain the possibility of not completing low-value functionality.
03	Ability to sell or use the intangible asset	Business case with assumed sales and marketing plan	Agile provides for a lightweight Epic business case (and hypothesis statement) and uses short customer feedback loops to validate assumptions
04	Details of how the intangible asset will generate probable future economic benefits. (e.g. existence of a market for the intangible asset)	Market and competitor analysis (often components of a full business case)	As above
05	Availability of adequate technical and financial resources to complete the development and use of the asset	Approved budget for specific scope backed up with detailed delivery and resourcing plans	Agile relies on high-level iteration plans based on constant resourcing levels (one or more teams). Funding is mapped to value stream not specific scope
06	Ability to reliably measure the expenditure attributable to the intangible asset during its development	Project cost accounting and day rate re-charging	Agile teams work on a backlog potentially made of items associated to different 'intangible assets' in a single sprint. Each item is estimated using story points. Story points are a relative measure specific to each team

It's easy to see that an accounting policy's treatment of costs more readily aligns with project-based waterfall development approaches than agile. Waterfall's neatly bounded phases, complete with dedicated project resources per activity, make applying the costing principles much more straightforward. Research aligns easily with typical requirements, analysis and design phases, whereas development covers coding and testing.

In an agile world of small, multi-functional teams conducting analysis, design and development for several user stories within a single two-week sprint, it's a challenge to determine which activities are 'research' and which are 'development'.

It is clear that mainstream financial governance based on the project business case combines with regulatory reporting requirements to make funding agile initiatives more difficult than traditional waterfall deliveries. This generates resistance to agile techniques, especially among those tasked with applying financial governance¹².

What happens if nothing is done to address these challenges?

Before looking in detail at ways to build support for agility, it's helpful to look at what happens when the agile and traditional systems co-exist without any attempts to align them. At NTT DATA, we call this the 'muddling through' strategy.

There are two characteristics that typify this approach. First is the creation of a 'translation function' that arbitrates between the upstream finance team and the downstream agile delivery unit. Second, the executive leadership continues to see agile as nothing more than a delivery mechanism, rather than something with the potential to transform the business.

Most agile delivery functions start life in the guise of a project. A business case is presented in traditional terms – we will deliver 'x' scope for 'y' cost and generate 'z' benefit. Once initial funding is secured, one or more multi-disciplinary 'squads' are set to work in fixed timeboxes. This will not be obvious to the finance function since everyone is working to a fixed scope. Soon the teams are delivering small increments of value to end users or, more probably, into intermediate test environments. Either way, agile has demonstrated value, through reduced delivery risk or reduced time to market.

As the first project nears completion, agile's proponents present the positive results and build one or more business cases to fund new projects that will be delivered in a similar way by the continuous delivery squad(s). These projects can be defined by their scope and costed in terms of the number of squads or sprint teams they need. Before long there will be several people whose primary job is to build project-based business cases and translate these into agile teams, as well as reporting back on the results.

This interface translates between the new world of agile delivery and the old world of the finance department. The new function is a critical enabler of the agile delivery engine. However, it also creates a barrier against genuine enterprise agility, since it masks fundamentally incompatible ways of working.



Tackling the challenge head on

At NTT DATA, we encounter many variants of the ‘muddling through’ approach, but we believe that it’s better to tackle the transition to agile head on. As Einstein said, it’s not possible to solve significant problems by using the same level of thinking used to create them.¹³

In the following section, we outline our approach to facing the challenge of paying for agile. It builds trust with the finance department and provides the foundation for a permanent transformation. Note that each organisation will chart its own path and may not need to go through every step.

Step 01: Build senior management awareness and support

There is often a desire for greater agility at board level, with transformation a priority, thanks to management forums, business journals¹⁴ and advice from consultants. Yet a desire for change doesn’t explain how to achieve it. So, the first, and most critical, step is to help executives understand the role of leadership in transformation.

This means letting go of outmoded governance tools. For example, waterfall is easy to grasp, so why would the CFO intuitively understand that it is not the most likely approach to deliver successful technology implementations¹⁵? After all, no one builds bridges using agile¹⁶. A focus on lean concepts is integral to this step. While lean ideas about wastage, flow, value and continuous improvement sound familiar, they need to be put into practice.

Next, it’s important to consolidate and work with senior finance leaders to promote a deeper understanding of how budgeting and funding impacts the adoption of agility. These discussions are unlikely to deliver change directly, but they open up debate and create a more receptive environment for the next stage.



Step 02: Quickly create a positive experience

The finance community needs to see the link between agility and positive results. We recommend identifying a suitable pilot initiative that can be delivered using an agile framework without the need for traditional project financing.

The key is to demonstrate the link between delivery activity and business benefits. This requires a systems-thinking approach. There are two main sources of data; the internal system that builds the product (e.g. velocity, defect density, flow) and product performance (e.g. drop rates, conversion, NPS). Through careful data gathering, developers can identify the links between the two and show tangible improvements.

Collecting performance metrics and creating insight enables finance to understand the feedback loop linking commercial benefits to the cost of creating features. This is the first step in shifting focus from fixed scope and detailed estimates. Persuading finance to buy into a set of key metrics that summarise how the system as a whole is performing is crucial to ensuring that there is a single, enterprise-wide view of product performance. Such transparency demonstrates that there are viable alternatives to traditional control mechanisms.

Step 03: Consolidate finance's belief in the benefits of agility

Encouraging the finance department to implement its own agile and lean practices can provide a compelling lesson in the benefits of agility.

In most organisations, the finance function expends significant effort collecting data and preparing reports¹⁷. Often, this involves cross-referencing multiple systems to establish a single view of the truth and transposing data into the requested reporting format. Consequently, less time is spent doing more valuable forecasting and scenario-analysis work that would better support the company.

Finance can benefit from borrowing ideas from the agile and DevOps movement. By investing in tooling, automation and data simplification, time can be freed to focus on higher-value work. The benefits can be amplified further by adopting lean principles such as visualising and limiting work in progress.

Supporting and coaching finance in the application of these approaches can be one of the most important ways to bring finance inside.

Step 04: Help finance to become a strategic enabler of agility

A step-change in enabling agility can be made by encouraging finance to move away from project funding and instead adopt a product perspective. For new initiatives, this requires adopting a venture capitalist-type mindset, whereas for more mature products, funding becomes a series of portfolio-level decisions.

Agility responds well to the uncertainty inherent in new ideas and ventures. To support this finance must move away from the typical 'bookend' model where it approves budgets at the start of a project and reviews ROI at the end. Agility requires continual assessment of the value being delivered. This means rapidly deciding to fund the initial idea, followed by continuous engagement to verify the benefits hypothesis and release further funds, or terminate funding if insufficient value is being delivered. This pattern of engagement is very similar to the approach that venture capitalists take to investing in start-ups, with close and frequent scrutiny of the investments they make. Taken together with an awareness that many will fail, winners are quickly identified and losers stopped before significant money is spent.

Once ideas have made it through the 'start-up' phase finance needs to adopt a more product-centric approach. The aim is to match a 'budget pot' against longer-term benefits and delegate accountability for the realisation of the benefits to a product management function. The budget pot is the cost of a long-lasting delivery team. Ideally, teams will be mapped against products or feature sets. The prioritisation decisions are a trade-off between new features that deliver the greatest value and fixes/optimisations that ensure existing capabilities keep generating value.

How do you know the money is being spent wisely?

Not being able to answer this question is the most common reason product funding approaches fail. However, if the organisation has implemented a performance-metric-based approach, as outlined in Step 02, the value of each decision will be evident to all. This encourages a culture of 'prioritisation equals investment'. The whole team needs to understand that a decision to build a feature equates to an active investment decision.

Step 05: Embed finance into the DNA of organic agile teams

Aligning a separate finance function with enterprise-wide, multi-functional agile teams is an attempt to fuse two different models of the organisation, with finance viewing it as a machine and the agile teams viewing it more as an organism¹⁸. For the latter to flourish, finance must move from being a top-down control function to being embedded within the agile teams.

Embedding the finance function into each of the agile delivery teams might seem like a radical idea, but it helps finance experts understand the work of the delivery team and what the team is accountable for. They can also provide continual support to help the team track costs and benefits.

Riot Games has adopted this approach¹⁹. Embedding finance experts in the agile delivery teams has encouraged enterprise agility. What's more, instead of serving the CFO, members of the finance department now see the delivery team as their main customer. Riot Games has taken this a step further by implementing net promoter scoring to gauge whether new customers would recommend the finance function to others.

This is undoubtedly a powerful approach to partnering with finance on the journey to greater enterprise agility. However, it is not without risk. Care is needed to avoid the agile team perceiving embedded finance experts as auditors. Finance experts work with the team to help build the benefits hypotheses and assess market results. They help the team decide whether to carry on or to pivot towards potentially more beneficial features. The danger is that team members could interpret a decision to suspend work in one area as synonymous with a decision to suspend the team.

Conclusion

Despite evidence that enterprise agility is associated with better business performance, most organisations find it hard to transform. In many cases 'agile' remains first and foremost a delivery choice. Even in those companies where the wider benefits are understood, at a theoretical level, agility often fails to reach its transformative potential²⁰.

There are often many reasons why agile adoption stalls.

These include a lack of executive sponsorship, rigid organisation structures and entrenched contractual frameworks to name a few. On top of these, the finance department is often a key inhibitor to greater agility. Agile takes a novel approach to uncertainty and this is reflected in the treatment of scope and associated work estimates. This clashes with the traditional approach of project-cost accounting, as well as the regulatory framework's treatment of costs, and makes it hard for accountants to embrace. This makes paying for agile hard, even as a delivery option. Paying for agility at scale, when enterprise transformation is the prize, is even more difficult.

While it's tempting to try to manage the tensions as they arise, rather than tackling the transformation head-on, muddling through is often unsuccessful and potential benefits go unrealised.

Instead, NTT DATA recommends that clients engage directly with the finance function to promote agility.

- Help senior leaders understand the value of agility and quickly move to a meaningful pilot that demonstrates how business benefits can be mapped to delivery costs in an agile context.
- Consolidate these successes by supporting finance to adopt agile and lean principles into its operations. This will promote a mindset where investment decisions are seen as part of the wider product portfolio.
- Finally, some organisations achieve greater agility by extending the concept of autonomous, empowered teams to include business functions such as finance, which were previously considered part of the corporate support structure. This is a bold move.

At a time when disruptive technologies emerge all the time and the digitisation of information is accelerating, adapting quickly is the key to survival. For many organisations, embracing agility is a sensible strategy. Data show that those embracing agile have a 70% chance of being in the top quartile of organisational health²¹ which itself is a predictor of long-term performance. In times like these, can you afford not to fund agility?

References

- 1 The Standish Group's Chaos Studies Report, 2017 examined 50,000 projects implemented between 2013-17 and found that the likelihood of a successful delivery using agile methods was 42% versus 26% for projects delivered using a waterfall approach.
- 2 Forsgren PhD, N., Humble, J., Kim, G., The Science of DevOps Accelerate. 1st ed.
- 3 Gartner 2018; "Move Away From Waterfall to Agile and Product-Centric Delivery Methods", Hotle and Wilson, note that 45% of surveyed organisations use agile versus 39% using waterfall.
- 4 Examples include a global electronics enterprise that delivered a 20% higher share price increase over three years by adopting an agile operating model and a global bank that reduced its cost base by about 30% while increasing customer satisfaction. For more details see Wouter Aghina, Aaron De Smet, Gerald Lackey, Michael Lurie, and Monica Murarka. 2018. The five trademarks of agile organizations. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/the-five-trademarks-of-agile-organizations>. [Accessed 4 March 2019].
- 5 Fewer than 10% of the non-financial S&P 500 companies in 1983 remained in the S&P 500 in 2013. Wouter Aghina, Aaron De Smet, Gerald Lackey, Michael Lurie, and Monica Murarka. 2018. The five trademarks of agile organizations. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/the-five-trademarks-of-agile-organizations>. [Accessed 4 March 2019].
- 6 There is growing awareness that such planning cycles limit enterprise-wide agility. For more information see Beyond Budgeting. What is Beyond Budgeting? Available at: <https://bbt.org/> [Accessed March 11, 2019].
- 7 Boehm, B., 1981. Software Engineering Economics.
- 8 McKinsey and the BT Centre for Major Programme Management at the University of Oxford. Found that the longer a project is scheduled to last, the more likely it is that it will run over time and budget, with every additional year spent on the project increasing cost overruns by 15 percent. See Michael Bloch, Sven Blumberg, and Jürgen Laartz. 2012. Delivering large-scale IT projects on time, on budget, and on value. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/delivering-large-scale-it-projects-on-time-on-budget-and-on-value>. [Accessed 4 March 2019].
- 9 The Financial Reporting Council (FRC) adopted Financial Reporting Standard (FRS) 102 in January 2015 and replaced almost all current UK accounting standards. It is based on the International Financial Reporting Standard for Small and Medium-sized Entities (IFRS for SMEs). FRS 102 is based on an IFRS framework but is designed to be simplified and streamlined compared to EU-adopted IFRS or current UK GAAP. See The FRC has replaced existing UK GAAP with a new financial reporting regime from 2015. How will this affect your business?, Available at: <https://www.grantthornton.co.uk/globalassets/1.-member-firms/united-kingdom/pdf/publication/2014/new-uk-gaap-framework.pdf> (Accessed: 6 March 2019).
- 10 FRS 102 does not specifically address the classification of costs. Rather it requires each reporting entity to implement a suitable accounting policy to determine whether costs are contributing to an asset.
- 11 FRS 102 does not specify whether software should be treated as a tangible or intangible asset. The decision is likely to be based on the software's intended purpose. For example, if it will be bundled with hardware as its primary purpose then it is likely to be presented as a tangible asset. If, however, the software is an asset in its own right (i.e. an e-commerce platform) then it is likely to be treated as an intangible asset. Asset classification matters most from a tax perspective. Tax relief on intangible assets is spread over the life of the asset at the amortisation rate whereas tangible assets obtain tax relief through capital allowances. For more information see ACCA Think Ahead. 2018. FRS 102 intangible assets – what's changed?. [ONLINE] Available at: <https://graduate.accaglobal.com/gb/en/technical-activities/technical-resources-search/2018/april/FRS102-intangible-assets-whats-changed.html>. [Accessed 5 March 2019].

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- 12 SAFe, as a framework, tackles this challenge through the concept of value-stream funding. However, organisations adopting SAFe are likely to be the ones challenging existing ways of operating and have signalled a willingness to explore alternative approaches. For more information see: Value Streams. scaledagileframework.com. Available at: <https://www.scaledagileframework.com/value-streams/> [Accessed March 11, 2019].
- 13 Wikiquote. 2019. Talk: Albert Einstein. [ONLINE] Available at: https://en.wikiquote.org/wiki/Talk:Albert_Einstein. [Accessed 4 March 2019].
- 14 For an early reference to the use of agile and lean techniques to accelerate product development and innovation see: Takeuchi, H. & Nonaka, I., 1986. The New New Product Development Game. Harvard Business Review. Available at: <https://hbr.org/1986/01/the-new-new-product-development-game> [Accessed March 11, 2019].
- 15 In 2012 Mckinsey noted that on average, large IT projects typically run 45 percent over budget and 7 percent over time, while delivering 56% less value than predicted, and of all the IT projects surveyed software projects had by far the highest cost and schedule over runs. See Michael Bloch, Sven Blumberg, and Jürgen Laartz. 2012. Delivering large-scale IT projects on time, on budget, and on value. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/delivering-large-scale-it-projects-on-time-on-budget-and-on-value>. [Accessed 4 March 2019].
- 16 In 1986, Alfred Spector, president of Transarc Corporation, co-authored a paper comparing bridge building to software development. The premise: Bridges are normally built on time, on budget, and do not fall down. On the other hand, software never comes in on-time or on-budget. In addition, it always breaks down. See Sneaker, S., 2005. How to Cheat at IT Project Management. 1st ed. USA: Syngress.
- 17 36% of CFOs believe too much time is spent on data collection and reporting activities at the expense of analysis and planning. Finance Monthly UK. 2019. 4 Keys For Finance Departments To Accelerate Agile Transformation. [ONLINE] Available at: <https://www.finance-monthly.com/2018/02/4-keys-for-finance-departments-to-accelerate-agile-transformation/>. [Accessed 4 March 2019].
- 18 Wouter Aghina, Aaron De Smet, Gerald Lackey, Michael Lurie, and Monica Murarka. 2018. The five trademarks of agile organizations. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/the-five-trademarks-of-agile-organizations>. [Accessed 4 March 2019].
- 19 Darrell K. Rigby, Jeff Sutherland and Andy Noble. 2019. Agile at Scale. [ONLINE] Available at: <https://hbr.org/2018/05/agile-at-scale>. [Accessed 4 March 2019].
- 20 McKinsey survey (2,500 businesses) notes less than 10% of respondents have completed an agility transformation. Mckinsey & Company. 2019. How to create an agile organization. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/how-to-create-an-agile-organization>. [Accessed 4 March 2019].
- 21 Wouter Aghina, Aaron De Smet, Gerald Lackey, Michael Lurie, and Monica Murarka. 2018. The five trademarks of agile organizations. [ONLINE] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/the-five-trademarks-of-agile-organizations>. [Accessed 4 March 2019].

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