

# Agile projects in a non-agile environment: What is your experience?

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## 1 Summary

This paper presents findings from a case study of a multinational organisation that adopted Dynamic Systems Development Method (DSDM) in one of their offices, along with a summary of the challenges they faced and suggestions from published literature about how to overcome them. Their main challenge was that their projects were approved, budgeted and monitored by their Headquarters using a traditional waterfall approach. As a consequence they were running agile projects in a non-agile environment. The three main aspects of this challenge were: 1) Differences in organisational cultures; 2) Managing the transition to agile; 3) Reporting progress and demonstrating control. Recommendations from the literature for each of these challenges include 1) Negotiating new approaches to knowledge management and knowledge sharing; 2) Supporting an acceptance and understanding of agile through aligning processes, education, ownership, understanding change, emphasizing values and winning the confidence of executive management; 3) Proposals for reporting formats, managing the burden of reporting, and reporting just enough.

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### Share your experience

**We are interested in your experiences with agile in non-agile environments.**

- **What challenges does your organisation face?**
- **How have you overcome these challenges?**

Please fill in our questionnaire at <http://www.agileresearchnetwork.org><sup>1</sup>

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## 2 Introduction

Using agile in a non-agile environment can be challenging. There are many reasons why this situation occurs, a common one is that agile is often adopted through a gradual transition process and during transition it has to exist within a non-agile environment. Transitioning requires changing processes, working practices, and the culture of an organisation. Agile transitions often start bottom up at the development team level and the biggest challenge is a corresponding organisational adjustment. In multinational organisations transformation may occur in one country but not in another. On a team level agile might work well, but the challenges occur once interactions with the wider organisation are required; the business does not understand the need to engage with the development team frequently, the existing governance does not support quick decision making processes and the budgeting is not flexible enough to accommodate the planning and re-planning of agile projects. When agile and non-agile areas of an organisation clash agile could be set up for failure.

<sup>1</sup> The Agile Research Network (DSDM-Agile-Research@open.ac.uk) is funded by the DSDM Consortium Board. The model operated by the network is that DSDM members propose the challenge they'd like to investigate, and then work closely with the research team to understand the causes and consequences of the challenge and to identify alternative ways of working from published research and other literature.

To start the discussion about agile in a non-agile environment, this paper presents the experience of a multinational organisation that adopted DSDM in one of their offices along with a summary of the challenges they faced and suggestions from published literature about how to overcome them. The main challenge was: their overseas Headquarters directed, budgeted and monitored their projects, using a traditional waterfall approach.

### 3 An overview of DSDM

DSDM is an end-to-end framework for agile project management and delivery. The first version was published in 1995, and it has been developed through several versions since, with the most recent being the Agile Project Framework. The underlying philosophy is that projects must be aligned to strategic goals and focus on early delivery of real benefits to the business.

The DSDM framework covers the full project lifecycle including roles, process, practices, and documentation. Phases include Pre-project, Feasibility, Foundations, Exploration, Engineering, Deployment, and Post-project. It's highly configurable to accommodate a range of project types and size, making it compatible with a variety of governance and programme office structures. The key techniques used throughout the lifecycle are Iterative and Incremental development, Timeboxing, MoSCoW prioritisation and Facilitated Workshops. Additionally, DSDM provides a set of roles that ensures teams contain the right mix of representatives from the business, solution developers and project management.

### 4 The story so far

About two years ago, after a change in external factors, the London office of a multinational organisation that operates in a regulated environment decided to adopt DSDM. The office decided to use DSDM because it covers the whole project lifecycle and it provides a framework that supports the governance needed in a regulated environment.

The transition to DSDM was supported by the business, the management and the Project Management Office (PMO) all based in London. Extensive training for the employees was provided and agile consultants worked closely with the organisation. From a London office perspective, the transition to DSDM was successful. Management reported that the agile culture was embraced and the project increments that were run using DSDM were delivered on time and within budget.

However, the organisational culture of the Headquarters and the London office began to diverge significantly. While the London office transitioned to agile their Headquarters still had a very hierarchical structure and used a waterfall approach.

The Headquarters had a prescribed waterfall approach but accepted an alternative approach from the offices; however, they were sceptical about the change of methodology in the London office. Their main concern was that London was not in control of their projects. At this stage with external factors playing a big role, being seen to be in control with respect to being on time and on budget was crucial to

the Headquarters.

The London office tried to address the concern by educating the Headquarters about DSDM and by setting up a rigorous governance process for their projects. They explained and produced documents that visualised how the new governance process related to the governance processes in the waterfall approach. However, concerns and challenges remained and the London office approached us, the Agile Research Network, about 18 months into their DSDM adoption to investigate the challenge of running agile in a non-agile environment. The remaining paper describes the challenges that the organisation faced and suggestions from published literature on how to overcome these challenges. The paper is presented from a viewpoint outside of the organisation, i.e. that of the ARN researchers who had access to the London office but did not engage with the Headquarters directly.

## 5 Challenges

The London office experienced a range of challenges that are discussed below and can be grouped into three categories:

- Differences in organisational cultures,
- Managing the transition to agile, and
- Reporting progress and demonstrating control

### 5.1 Differences in organisational cultures

The different organisational cultures between the Headquarters and London office led to misunderstandings, different expectations and frustrations.

#### 5.1.1 Communication

Agile working introduces a different approach to communication. Two communication challenges were identified. First, how can different parts of the organisation communicate effectively when one part, the Headquarters, values written communication over verbal communication while the other part, the London office adopting agile, encourages verbal communication over written communication? The London office subscribed to the agile principle of only producing essential documentation.

Second, how do the different parts of the organisation negotiate the level of detail that they communicate? The challenge was that the Headquarters requests detailed information about projects and uses documentation to review everything, while the London office manages detailed project information by regular verbal communication within teams and uses written documents based on providing “just enough” information. The London office found it challenging to find the right level of detail and to understand what needed to be reported. They felt that they had not achieved the right level of detail yet because Headquarters frequently followed up with requests for more detailed information about their reports. Headquarters did not articulate who or how this information would be used leaving the London office feeling that the information requested was far too detailed. In addition the

reports required by Headquarters could not be directly extracted from data that was already captured by the agile projects. This meant that creating reports was an additional effort on top of day-to-day tasks.

### 5.1.2 Staff rotation

Additional to the uncertainty about how and what to communicate, the London office also faced the challenge of frequent staff rotation at the Headquarters as part of their organisational culture. At the Headquarters, employees rotated their positions about every two years, this involved not only changing their role but also the Department in which they worked. This increased the challenge of establishing an understanding of agile with relevant contacts at the Headquarters. Staff in the London office expressed frustration that by the time they had got to know a contact at Headquarters and had developed their understanding of agile, that member of staff was rotated and the process had to start again.

### 5.1.3 Different values

From Headquarters' point of view 'value' was associated with projects being on-time, on-budget and delivered according to specification. In contrast, while the London office appreciated the need for projects to be on time and on budget, they also focused on delivering fit-for-purpose products that provide business value. Progress was demonstrated by working software and through verbal communication rather than adherence to the plan. The contrast between agile and traditional values was highlighted by the differing approaches to communication and control taken by the London office and Headquarters. A number of staff at the London office felt that Headquarters requirements undermined their new agile values and created an overhead because special documents needed to be produced. For example, the agile values of trust and minimal documentation were challenged when informal queries from Headquarters, which were initially addressed by a conversation, were still followed by a formal request for a written document. Whilst the London office embraced agile philosophies, the balance of power remained with the Headquarters that valued documentation as a means of control.

### 5.1.4 Language barriers: Lost in translation

Additionally, the Headquarters and the London office both worked in different languages. This meant that all written reports provided by the London office were translated within the Headquarters. This was perceived as a potential source for misunderstandings because translations can be subjective and emphasis of certain aspects might be lost which in turn might lead to additional queries for more information.

## 5.2 Managing the transition to agile

18 months into their adoption, the transition to agile at the London office was still in progress. The Project Management Office (PMO) was still building up their agile knowledge base and improving and introducing new processes. The reporting for

different projects was not yet fully consistent and project report templates were still evolving. This compounded the perceived lack of full control and the likelihood that inconsistencies would be seen as issues.

Although the London office had educated the Headquarters about agile concepts, some agile concepts did not seem to be fully understood yet. For example, any changes to project plans were perceived as a potential failure for the project and an indication of a lack of control.

The London office realised very quickly that their Headquarters expected exact estimates in terms of times and cost early on in a project. They educated the Headquarters that early project “estimates [during Feasibility] will be uncertain and can only be expressed with a low confidence factor” (DSDM 2014) and hence have to be revisited as more accurate information is gathered and will therefore change.

Despite this, the Headquarters perceived any subsequent changes as an indicator that the project was not on track and the London office were not in control of their projects.

### 5.3 Reporting progress and demonstrating control

Agile projects follow a different lifecycle compared to waterfall projects and when reporting agile progress to non-agile departments of the organisation it is challenging to identify what needs to be reported and how to communicate progress.

In this case study even small changes to a project’s scope were considered to indicate a lack of control. Re-prioritisation, de-scoping or even changes to the timeline without changing the scope such as moving a Prioritised Requirement List (PRL) item from one timebox into another, were all perceived to be changes from the original project plan, and hence indicative of a lack of control.

The main challenges the London office faced with reporting were: demonstrating control without retrofitting the agile progress reports into waterfall templates, finding the right level of detail and ensuring that the information provided was interpreted correctly. Given that Headquarters was not familiar with agile methodologies it is important to ensure that agile progress data, for example information about the Prioritised Requirements List (PRL) or timeboxes are understood correctly. This raises a number of questions. For example how to effectively present agile progress to non-agile parts of the organisation? How to ensure that re-prioritisation or de-scoping is well presented and will be easily understood? How to avoid retrofitting but still satisfying all the information requests?

When the non-agile environment does not fully accept and recognise agile principles it is difficult to demonstrate control. This poses the question: How can the London office address the concerns of Headquarters without compromising newly adopted agile principles?

## 6 Mitigating the challenges

Here, we present a range of different mitigation strategies suggested from existing literature on these areas, some of which have been applied by the London office.

## 6.1 Differences in organisational cultures

Nerur, Mahapatra and Magalaraj (2005) discuss how the transition to agile requires an organisational shift from command-and-control management to leadership-and-collaboration. In the organisation presented here the change to agile only happened in one part of the organisation, resulting in two different organisational styles existing side by side. Many areas of difficulty were related to different knowledge management practices in agile. The increase in verbal communication means that much knowledge in agile projects is tacit and resides in the heads of team members rather than being documented. This shifts the balance of power away from management towards development teams. If this is not acceptable to an organisation, an agreement needs to be made about which knowledge should be codified and which should remain tacit (Nerur et al, 2005).

Noll, Beecham and Richardson (2010) acknowledge that the geographic and temporal distance of global teams can limit informal communication, trust building and knowledge sharing and that cultural differences can lead to misunderstanding of goals, task and requirements.

Three suggestions to promote inter-cultural knowledge sharing (Moller and Svahn, 2003) that can help to overcome differences in organisational cultures are:

- Establish shared team goals.
- Ensure a common understanding of managerial information and monitoring systems.
- Building trust through systematic creation of personal relationships.

## 6.2 Managing the transition to agile

Why might executive management resist accepting agile methodologies? Accepting change is always difficult and organisations often have decades of experience of traditional project management, access to good quality project support tools and a traditional project management mind-set.

In the existing literature it is often suggested that organisations should make adjustments, develop an organisational change management plan and ensure that the whole organisation transitions to agile. While this might be an ideal scenario, it is not always possible. In the organisation presented here, it was clear that the Headquarters would not transition to DSDM. The following suggestions based on Boehm & Turner (2005) focus on supporting the acceptance and understanding of agile methods rather than on convincing the whole organisation to adopt agile as well.

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Align processes	Realign and redefine traditional milestone reviews to better fit into the agile process Identify compatible and incompatible assumptions between agile & traditional approaches and eliminate clashes where possible.
Education	Educate stakeholders about the new methodology and principles Translate agile and software issues into management and customer language.
Create ownership and include stakeholders	Include waterfall stakeholders in project meetings/retrospectives. Encourage executive and middle management to create their own list of transition issues to focus on and work through.
Understand the effects of change	Investigate how communication occurs. Conduct empirical studies about the adoption of agile and collect evidence about the new process to present to the stakeholders
Emphasize and explain new values	Apply throughput accounting rather than cost accounting (Anderson, 2004) <sup>2</sup> Emphasize and explain the focus on business value and how that is reflected in agile progress reports Emphasize the value of team members and the value of verbal communication
Win confidence of executive management	Convince the management by demonstrating that agile works for the organisation. This is probably the most powerful strategy to overcome management resistance. However, it takes time to be able to demonstrate success.

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### 6.3 Reporting progress and demonstrating control

This section focuses on suggestions about what information should be presented to management, how information can be visualised, and how to avoid time-consuming reporting.

<sup>2</sup> Anderson argues that the weakness with Cost Accounting, which calculates the cost per item produced, is the assumption that when labour and machinery are inactive they do not incur costs. In fact, in most organisations labour and machinery are fixed, and should be put in a bucket labelled 'overheads'. In contrast Throughput Accounting focuses on delivered value. It seeks to understand and maximize the efficiency of the flow of value through the system. In other words, it wants the latent value added in an investment to be released as quickly as possible as Throughput. It measures how effectively the system moves the Investment value through the system and converts it to Throughput. This is more usually described as 'effectiveness'.

### 6.3.1 What should reports look like?

One representation of relevance to project management information is an agile management dashboard (see figure 1). Barton et al (2005) suggest a dashboard to give an overview of all project information. The information is on a higher level than the development team level (at product level instead of sprint level). It includes a visualisation of the progress for each feature using a colour scheme to easily identify project risks (Parking lot), a product burndown chart, an overview of the work breakdown structure and a chart that represents the expected and actual business value.

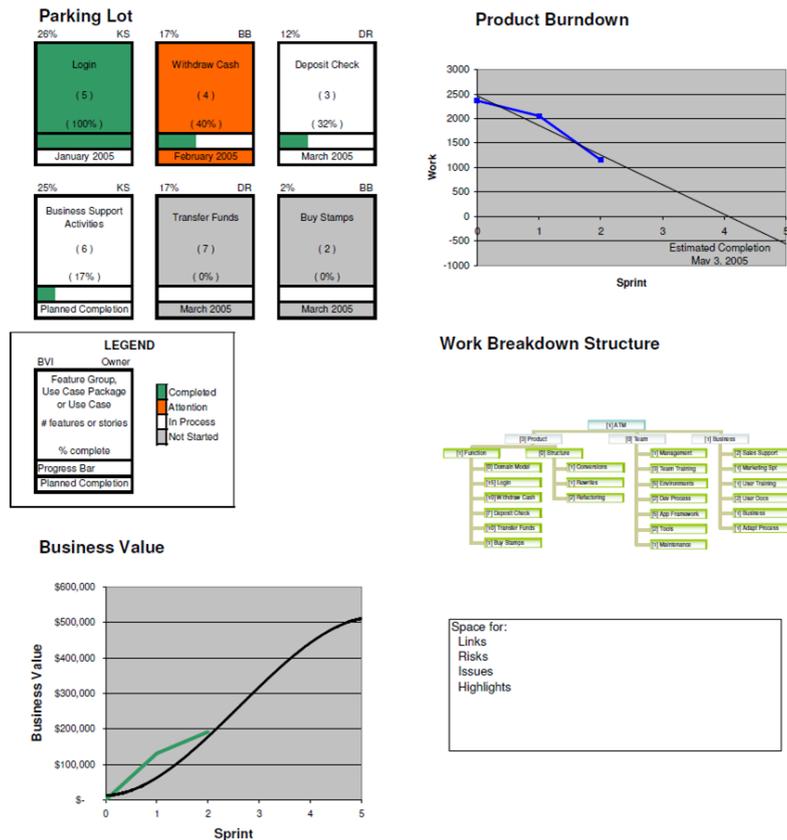


Figure 1: Agile project management dashboard (Barton et al 2005)

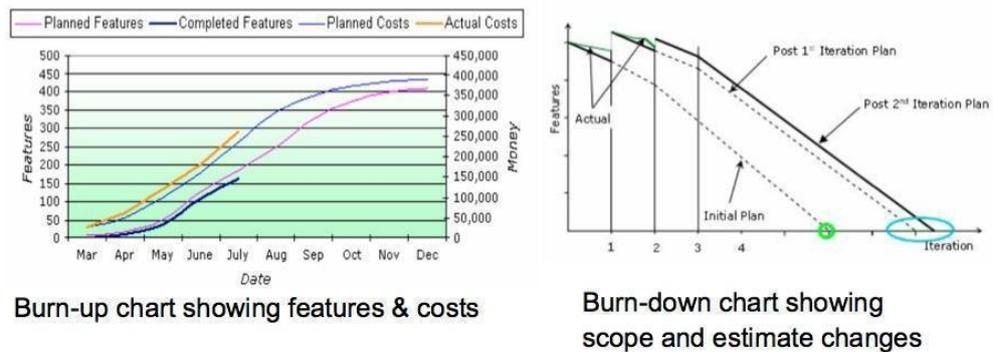


Figure 2: Combining earned value reporting with agile burndown charts (Cabri & Griffiths 2004)

Two alternative representations are shown in figure 2. The chart on the left combines a view of cost (a traditional project measure) with a feature burn-up (an agile project measure). The chart on the right shows how changes in scope can be combined with a visualisation of planned and actual progress.

### 6.3.2 Overcoming time-consuming reporting

Suggestions for managing the burden of reporting (based on Hartmann and Dymond 2006, Ambler n.d.) are:

- Capture reporting efforts as stories and plan them as part of the project to increase visibility of reporting effort for management.
- Decrease the effort of creating reports by establishing self-documenting processes (the information needed for the reports are gathered as part of the process instead of an additional effort at the end of each iteration/project). This allows for easier extracting of reports from existing information.
- Understand the purpose of the documentation: Often reports include information that is not really needed and used. Track the use of reports to identify which information is actually valuable and who is actually reading them.

### 6.3.3 Report just enough

Reporting just enough isn't easy. For a start one might ask what does 'just enough' mean? This might vary from organisation to organisation and from report to report. Hartmann and Dymond (2006) recommend a set of principles to consider when developing reports:

- The **name** of the report should avoid ambiguity.
- What is the **purpose** of the report?
- Identify the question that the report is addressing because each report should answer a specific, clear question for a particular role or group.
- Basis of **measurement**: Clearly state what is being measured. Ensure that the labelling of graph axes is clear.
- **Level and usage**: Indicate intended usages at various levels of the organization. For example, is this report for the project level or program level?
- Identify **assumptions and expected trend**: What do you expect to see happen? For example, highest value features will be delivered at the beginning of the project.
- **When to use it**: What prompted creation or use of this metric/report? How has it historically been used? For example, for evaluation or for planning?
- **When to stop using it**: When will it outlive its usefulness and be extra baggage?
- **Warnings**: Recommend clearly what it should be used for and what the limits of use are.

## 7 What's next?

This paper reports on the challenges faced by one organisation when running agile in a non-agile environment and presents ideas to mitigate these challenges based

on existing literature.

The main challenges are:

- Differences in organisational cultures including communication, staffing approaches, values and language barriers
- Managing the transition to agile and learning how to co-exist with the non-agile part of the organisation
- How to report agile progress to demonstrate control over projects and negotiate what information should be provided and at which level of detail.

So, what's next?

We would like you to share your experiences about running agile in non-agile environments. Visit our website and share and discuss your experience: <http://www.agileresearchnetwork.org>

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