



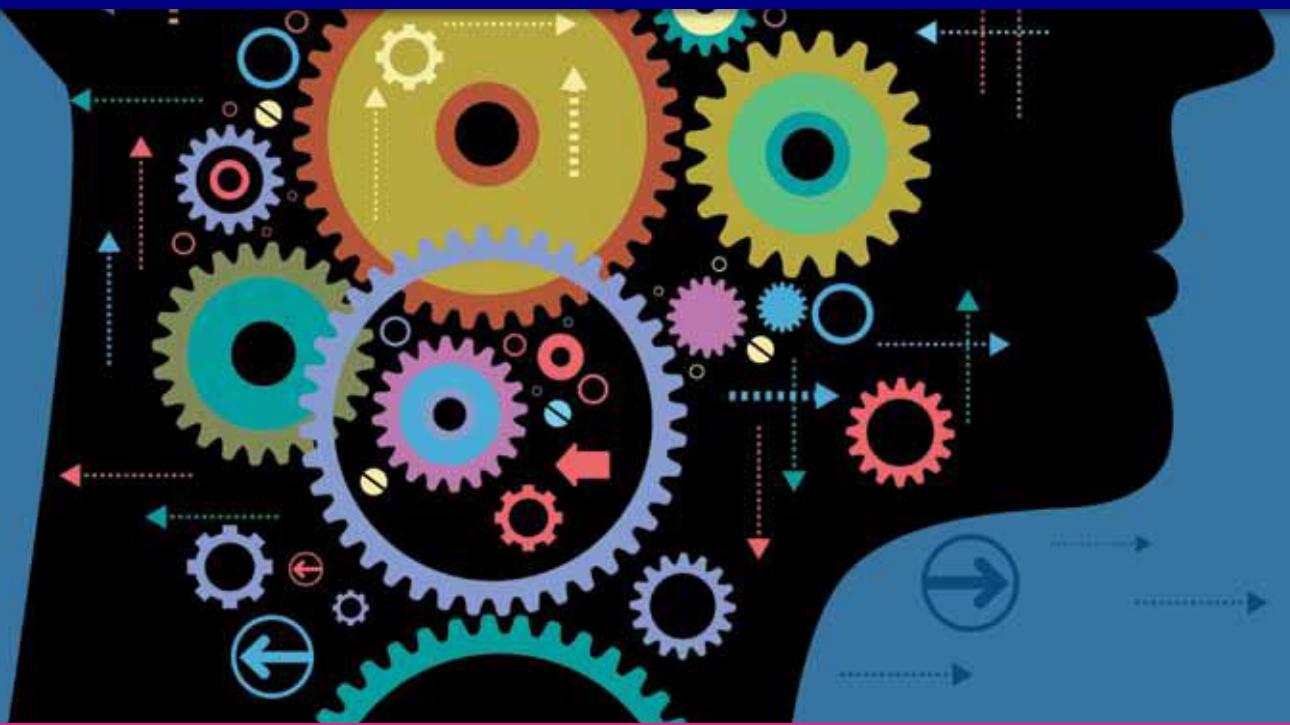
KNOWLEDGE TRANSLATED INTO RESULTS



MULTI SPEED IT

PINK THINK TANK 2016 – RESEARCH

WHITE PAPER



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Executive Summary

When Demand Out Paces The Rate Of Supply!

For many service organizations, having higher demand than the ability to supply in a timely manner may be considered a nice problem to have. However this imbalance poses a “major problem” for internal IT Service Providers. The problem lies in the fact that many CIOs struggle with an image issue with their business partners who more often than not consider the rate of IT supply as far too slow to meet business needs; and that the services they currently provide are more costly, restrictive and less technically advanced than consumer options they can purchase directly.

This challenge often results in a predictable economic cause-and-effect where the business partner loses patience and chooses to purchase alternative services directly from external vendors or funds their own IT capabilities. While there are many potential drivers for this trend, it is reasonable to assert that a major contributing factor is the relatively low industry maturity of the Demand, Portfolio and Resource Management processes. These organizational capabilities play a crucial role in providing insight and direction into planning and prioritization activities critical to deliver outcomes at the speed they are required.

This speed or cycle-time issue has triggered a great deal of discussion in the industry around structural and Lean based process changes designed to improve the focus on value, the flow of work completion and the removal of waste. The outcome of which has led to the increased focus on Lean, Agile and now DevOps speed oriented improvements. One structural improvement approach receiving a lot of attention is the focus on creating a Bi-Modal organization. The premise of this model promoted by Gartner focuses on creating separate operating models for specific business units based on the need for either speed/innovation or stability.

- **Mode 1** is traditional/Waterfall based, focused on linear work completion with a high degree of emphasis put on production stability, security, availability, safety and accuracy
- **Mode 2** represents iterative development, experimentation, innovation, rapid release cycles, minimal viable product and emphasizing agility over speed



In essence, the goal of this model is to create a duplicate IT function with different values, practices and priorities from the rest of the organization with a goal of creating fast track assembly lines for key IT services in order to address a core area of business dissatisfaction related to the speed of supply. Unfortunately the side effect of this model creates a high degree of disconnect within the organization; trading speed in one area for increased disunity and increased dysfunction by creating further entrenched cultural silos.

This year's Pink Think Tank (PTT) has identified the issue of matching demand with the rate of supply as a critical success factor for IT service organizations. The problem statement being that every organization must be capable of running at multiple speeds. Understanding that the core issue at hand is removing the negative perception of being too slow to support business needs. In essence, this means applying Lean principles to optimize its primary value systems and delivery processes.



Table Of Contents

1	THE PINK THINK TANK.....	5
2	MULTI-SPEED ORGANIZATIONS.....	6
3	PINK THINK TANK RESEARCH.....	8
4	DIFFERENT OPERATING MODES.....	9
5	MODEL ADOPTION.....	11
6	ADJUSTING METHODS BASED ON NEEDS.....	12
7	DEMAND & PORTFOLIO MANAGEMENT.....	13
8	DEVOPS AUTOMATION.....	14
9	FUNCTIONAL & NON-FUNCTIONAL REQUIREMENTS.....	15
10	SYSTEMIC THINKING.....	16
11	SMALL BATCH Vs. LARGE BATCH.....	17
12	BUSINESS DRIVEN RELEASE CADENCE.....	18
13	DEPLOYMENT SUCCESS.....	19
14	NEXT STEPS.....	20



1) The Pink Think Tank

Every year Pink Elephant conducts the PTT as a precursor to their Annual International IT Service Management Conference & Exhibition as a means of researching the trends, problem statements and opportunities facing the industry. They do this by getting some of the industry's best and brightest minds in a room for a day to discuss a topic of pressing importance to the IT sector. In 2016, the PTT looked at "Multi-Speed IT".

While the name of this group is called a “Think Tank” this exercise is not intended to be a conceptual discussion. The objective of the PTT is to provide pragmatic actionable advice rather than theoretical speculation. They seek to provide actions that you can take back to your day jobs. Each year the PTT has been quite accurate at identifying key issues, mainly concerning the IT sector. This year, the PTT looked at an issue that is front of mind for many organizations: maintaining services and business applications which operate at different speeds or cadences due to the complex dynamics related to people, process and technology dimensions.

To accomplish this goal Pink Elephant assembled a team of subject matter experts from different perspectives and backgrounds based on the key topic identified earlier in the year. They focused specifically on assembling a balanced variety of panel members and ensured that the panel represented a good scope of different viewpoints. The panel included the following:



Cathy Kirch,
ITSM Office Governance
Manager, Allstate



Chris Flanagan,
VP, ITSM & Operations,
Prudential



Damon Edwards,
Managing Partner,
DTO Solutions



Gary Case,
Principal Consultant,
Pink Elephant



Jack Probst,
Principal Consultant,
Pink Elephant



J. Paul Reed,
Principal Consultant, Release
Engineering Approaches



Richard Knaster,
Principal Consultant,
Scaled Agile Inc.



Rob England,
The IT Skeptic



Troy DuMoulin,
VP, Research &
Development, Pink Elephant



2) Multi-Speed Organizations

As a first step to the research and deliverable creation, the PTT initially spent time refining the problem statement and agreeing on a common understanding of terminology and definitions. For example: “speed” was a difficult word that caused substantial debate based on the different possible interpretations of this term in that it required a qualifier such as “fast” or “slow”. However, the PTT ultimately decided that it is the generally accepted word for different lifecycle cadences. It implies going fast but of course slow speed is a legitimate speed as much as fast speed. Other words that were considered were “velocity” in that by definition it implies both speed and direction and “cadence” – a more neutral word – but one that is not as easily understood without context. Finally “speed” was settled on as the familiar terminology. So the PTT decided that the problem statement for this year’s PTT would be:

“How do you lead and manage a multi-speed organization in order to meet the changing demands of the customer?”

As well as the terminology around speed/velocity/cadence, the PTT also talked about the reason or drivers as to why this is an important issue. The conclusion was that, each organization needs to find an appropriate development speed for each service or group of services with similar characteristics which matches the expectations and more importantly the rate of demand for change required by the business. The reality, in all but the simplest and most greenfield organizations, is that demand for different services varies and the speed at which requests can be completed is dependent on many different technical and non-technical variables. The nature of this reality is that different services will operate at different speeds of delivery based on attributes of complexity, dependency and the level of automation vs. manual effort. A critical step required to improve in this area is to understand the baseline of existing services and to measure their current rate of new value generation compared to the pattern and rate of net new demand. The goal of this activity is to gain an understanding as to where there are imbalances between these two key aspects of service provisioning and value creation.

One of the key outputs of this year’s PTT was to define a set of organizational enablers that promoted improved speed of delivery as well as accelerators that can be applied to enable faster velocity of flow. The key enablers and accelerators will be the subject of an upcoming paper providing the reader with a tool kit to assess and improve any given service in the context of speed of delivery.

Key steps required to address this issue include:

- 1) The definition of the IT Service Portfolio
- 2) Baseline the current rate of demand and cycle time throughput for key services
- 3) Assess each service with respect to its ability to currently meet demand expectations
- 4) Assess services which have a demand/supply imbalance based on the critical enablers and accelerators required to improve flow
- 5) Adjust enablers and apply accelerators as required until a balance of demand and supply is reached



Using Lean Principles & Basic Queuing Theory it is not difficult to establish which services have issues with an imbalance of demand and supply based on the identification of long queue times for both project and business as usual (BAU) requests. These are typically evidenced by a significant backlog of requests (inventory) which build up in front of services where flow is slower than required. Also, principles such as Little's Law enable a service organization to estimate the average cycle time of requests based on the calculation of Work in Progress (WIP) and Average Completion Rates.

Little's Law – Cycle Time = WIP/Completion Rate

Example of Multi-Speed: As an example of the Multi-Speed nature of our current state, here are three different services that, by the nature of their technical and non-technical characteristics will have different rates of supply.

Service 1: A Built-on-the-web/browser based customer engagement service which is largely independent from other key systems. Changes for new features and enhancements come in on a weekly basis and the system architecture is leveraging virtual on-demand cloud-based technologies for its core sub-services such as hosting, storage, network, etc. The team is using an Agile, small batch software development method and requests are prioritized by the Product Owner.

Service 2: A hybrid messaging service with elements which are provided by external cloud providers and other elements such as client software and internal network systems which are hosted on-premise. There is a high level of integration with other key systems such as the CRM software. Customer demand for changes and enhancements is periodic and normal releases occur on a quarterly basis. Major platform-based requests are considered as part of the annual planning process depending on scope and cost.

Service 3: A mainframe-based ERP system with integrated web elements supporting key financial processes. Customer demand for new forms, reports and enhancements occur on a regular basis (monthly). Major feature changes occur on a quarterly basis. The mainframe support is currently supplied by a third party supplier which shares their development resources with several other accounts. Requests are prioritized based on resource availability and a fee-for-service basis which requires a special approval process.

Each of these three services exists within the same organization and have natively different constraints and complexities, each of which act as speed accelerators or decelerators shifting each service into different speeds of development.

Rather than focus on an oversimplified two mode model, it is critical to acknowledge that the organization by their nature will have services which run at different speeds (Multi-Speed). The key is that organizations need to adjust their processes rather than create duplicate structures in order to balance the need for both speed and quality. The remainder of this paper will focus on research conducted with organizations which face this challenge in order to identify how they address the reality and challenge of a multi-speed organization.

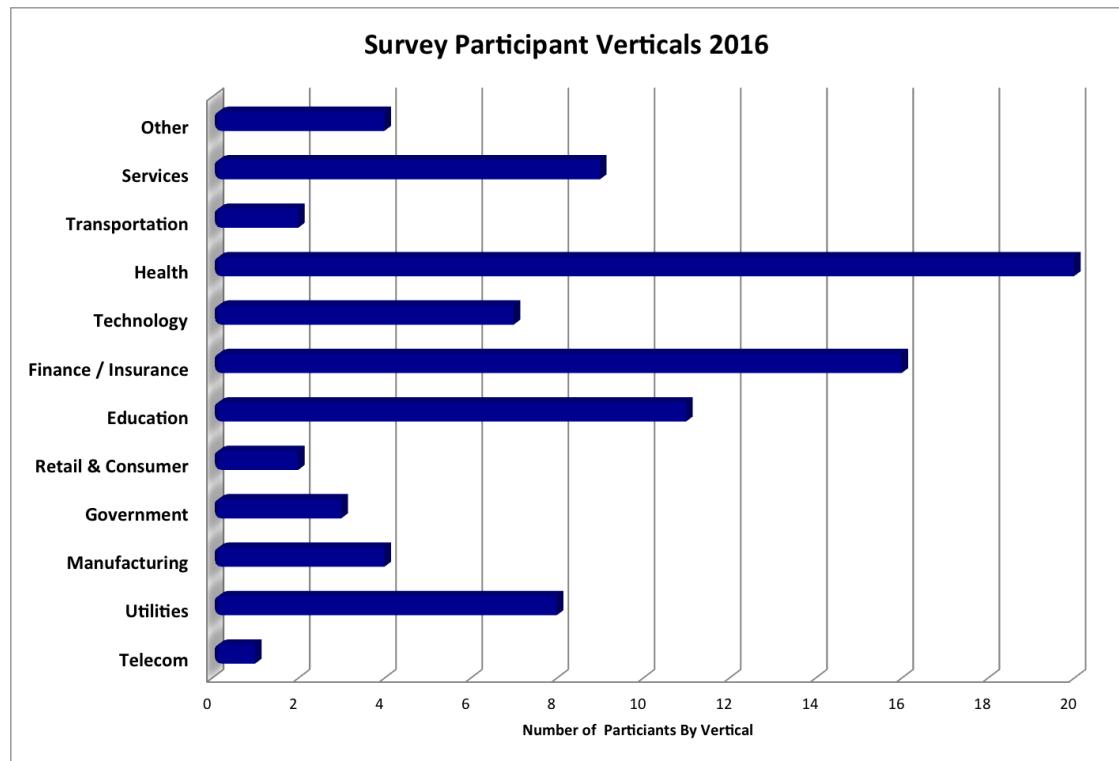


3) Pink Think Tank Research – Multi Speed Organizations

As part of the PTT output each year, we conduct a survey focused on the proposed topic of discussion. This year's research focused on what organizations are currently doing to address the challenges faced by the increased pressure to deliver outcomes faster at less cost. In general, this has led the industry to focus on the introduction of Lean, Agile and DevOps type improvements.

The remainder of this paper will present the findings of this research and analyze what the results represent in terms of the Problem Statement of running a Multi-Speed Organization.

Survey Approach: The survey audience for this research were the attendee's of Pink Elephant's Annual International IT Service Management Conference & Exhibition held each February in Las Vegas. The typical candidates who attend this conference represent middle to senior level stakeholders from most major verticals. The survey responders represent just under 100 organizations which vary in size and complexity. The nature of the responders as decision makers and the senior level of their roles provide a diverse mix of perspectives and blend of input from different verticals. From the graph below, the top three verticals represented in the survey are Health, Finance and Higher Education.





4) Different Operating Modes

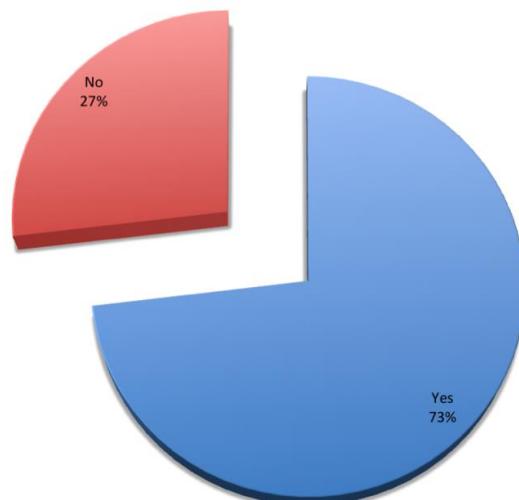
As discussed earlier in the paper a word that is gaining popularity is “mode”. The context for this discussion is the perceived need to function as an organization with “modality”; meaning establishing two separate structures focused on different goals i.e. Speed/Innovation vs. Reliability/Availability. While this may be a legitimate initial approach to accelerating the rate of speed for specific services the risk is that the new structure or team becomes isolated and disconnected from the rest of the IT organization if it is not absorbed back into the core. Also, the PTT members do not believe that it is necessary to forego one set of principles to achieve the other. An organization should seek to balance the need for both goals and not make trade offs.

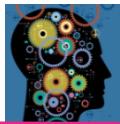
In the longer term, what is thought of as a solution engrains negative behaviors by creating structures that reinforce silo mentality. It is the view of the PTT that setting up and maintaining multiple modes of thinking in an organization engenders negative elitist behavior and generates resentment. What is needed is a single organizational identity focused on ensuring that all services are operating at a speed that meets demand, while also accepting that multiple lifecycle/development speeds are a fact of life. In essence, one mode, multiple speeds.

Question 1 & 2 – Current State

Building on the issue of modal operation, the first questions asked during the survey were designed to assess the degree of separation organizations establish between innovation processes and teams. A separate process would indicate that different approaches are used for concept and design over enhancement requests for established systems and services. Based on the survey results, the majority of organizations (73%) have separate processes to handle Innovation vs. Business As Usual (BAU).

Innovation Processes Are Managed Differently Than Business As Usual?

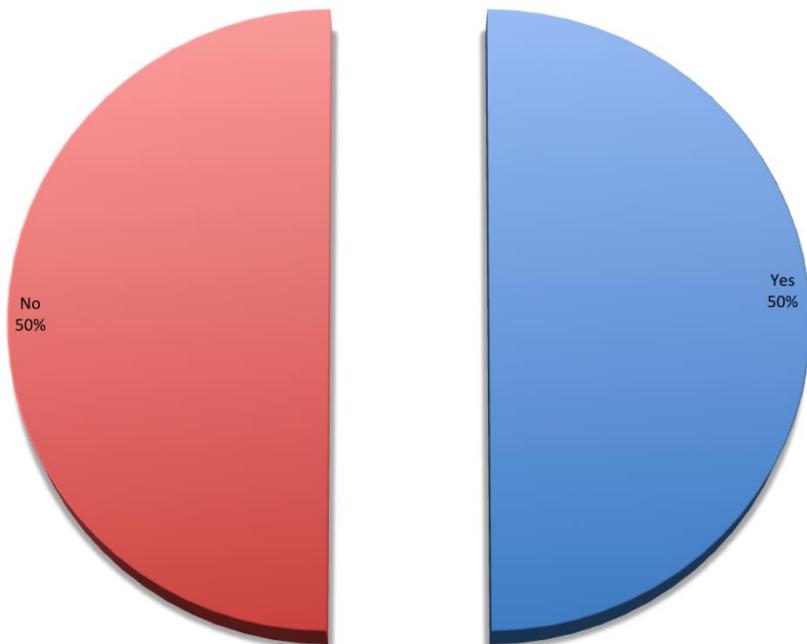




What is interesting to note on the next graph is that 50% of the organizations use a separate or dedicated team to deliver on innovation objectives vs. BAU work. This 50/50 split provides insight into the degree of dual modality represented by the survey respondents. What is also possible to extrapolate from these two related graphs is that approximately 25% of organizations are able to use a single organization but leverage separate processes to handle both innovation and BAU work.

While this perspective of Dual Mode is slightly different from the DevOps Team concept of establishing dedicated teams for specific systems and services, it does illustrate at least 50% of the organizations who participated in this survey currently establish dedicated functions for handling different types of work.

There Is A Separate or Dedicated Team / Group Focused on Innovation Initiatives?





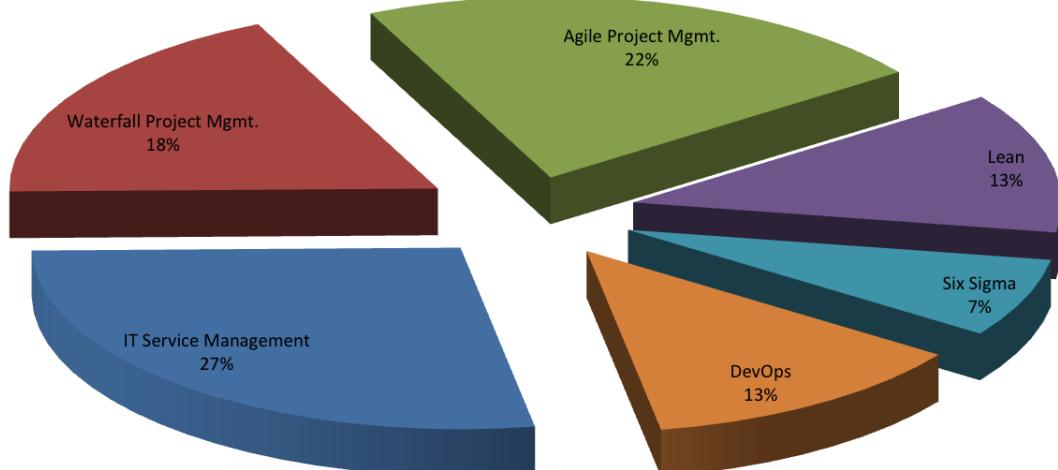
5) Model Adoption

Earlier in this paper the statement was made that based on the growing pressures related to the speed of delivery, organizations have been adopting improvement methods focused on efficiency. The qualitative observation of several PTT members is that these growing pressures have changed the general language, tone and media focus in the IT industry over the past two years. Previous key words that were used frequently included availability, reliability, security, compliance, maturity, control, best practices, etc. However, the key words or at least the emphasis has been changing over the last two years to agile, fast, lean, minimal, nimble, fit for purpose, emergent practice, etc.

This observed change in tone has resulted in a shift or at least an equal focus on frameworks which are relatively new or are new to IT such as Agile, Lean, Six Sigma and now DevOps. A key data point that was collected in the research was to assess the degree of adoption of these models. What is interesting to note from the data below is that the emerging models are rapidly taking root with the majority of the survey organizations and that this adoption rate is outstripping previous models such as IT Service Management (ITSM) and Waterfall Project Management.

A critical element to note about Lean and DevOps is that both of these models focus on customer outcome and product orientation as does ITSM. They also focus on collaboration and the removal of bottlenecks and constraints such as the traditional silo mentality that challenges most technically oriented organizations.

What models and concepts are currently being practiced in your IT Organization?



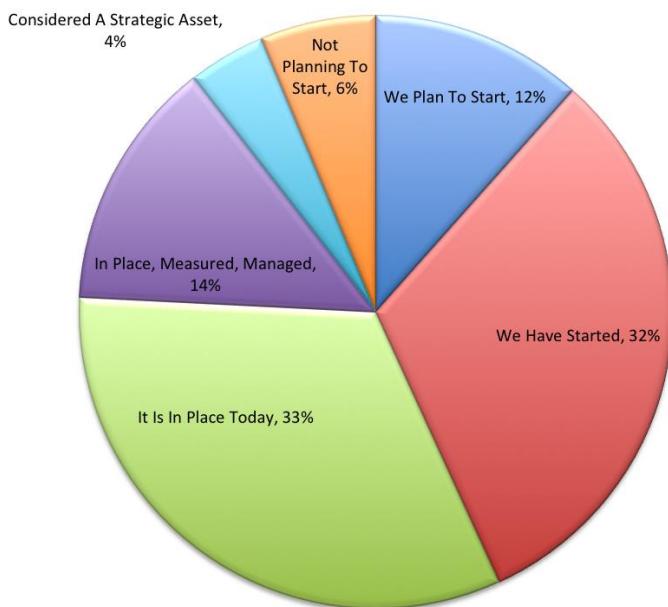


6) Adjusting Methods Based On Needs

As captured in the initial survey question most organizations adjust their processes according to need. Driven by business needs and requirements, organizations that adopt Agile development methodologies will find that traditional linear project approaches are more appropriate for key systems of record. These systems typically change less frequently. They also demonstrate a high degree of system dependency, require high degrees of availability and can be constrained via compliance to regulatory protocols.

This survey question seeks to understand to what degree organizations adjust their development processes based on business needs. As can be observed from the result for this question, the majority of organizations understand and flex their development models based on the business drivers. This is further demonstrated by the percentage of organizations which have adopted Agile development methods. However, it should be noted that while it is important to demonstrate flexibility in the use of development processes, establishing separate or dedicated groups for this purpose is not a prerequisite.

We align the development methodology we use for new service introduction to meet business drivers, needs or requirements





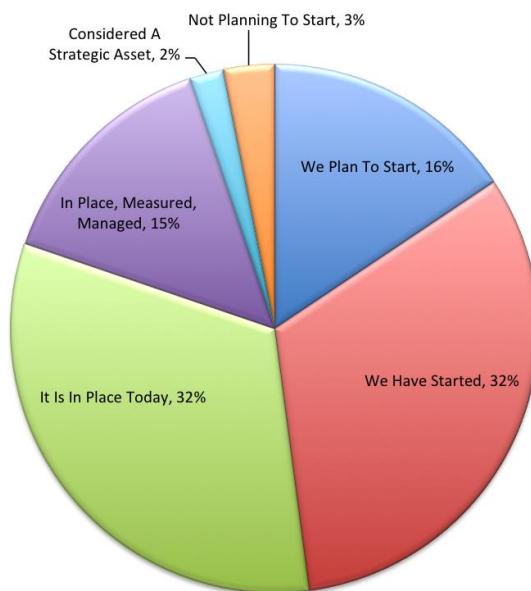
7) Demand & Portfolio Management

The Lean principle of Muri (inflexibility/overburden) is a proven contributor to the decrease of overall speed or flow. If the IT organization does not have the required skills, resources or capacity to support the rate and type of demand, this causes backlogs and customer dissatisfaction. The strategic ITSM processes of Demand and Portfolio Management play a critical role in addressing these specific challenges and to ensure that formal engagement channels are established to receive new business demand. These two processes are in turn supported by the function of Business Relationship Management to help identify, shape and influence both the incoming demand and the optimal use of current services. Both inputs provide critical data to proactively inform the IT organization about the resource requirements needed to supply demand.

Without these processes the IT service organization typically says 'yes' to all requests without understanding their current and future resource and skills capacity to handle the total demand. In essence, the organization suffers from un-gated and un-prioritized demand causing issues of too much work in progress (overburden) and an inability to shift priorities, proactively acquire necessary skills and adjust resources (inflexibility). The end result of which causes significant loss of flow and velocity.

From the research data this issue is well understood with the majority of organizations either having addressed this issue or are in the process of doing so at this point.

We proactively manage development capacity by prioritizing the intake and release of projects to optimize value delivery and not overtax our development capacity





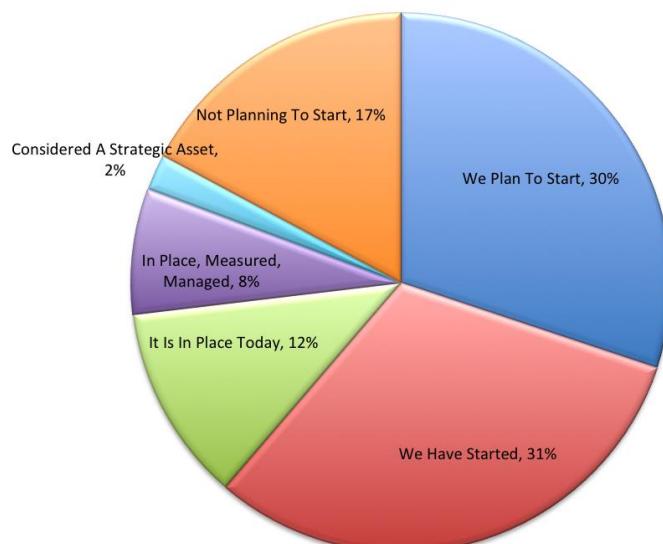
8) DevOps Automation

It is the nature of IT professionals to look for ways to automate repeatable tasks. However, the key word in the previous statement is “repeatable”. Unfortunately another traditional characteristic of IT culture is a practice of custom build or a preference to select best of breed solutions for specific tasks. Lean describes this lack of standardization as Mura (variability), the impact of which causes significant loss of flow and velocity. A key element of DevOps is the focus on process automation however, a critical success factor for achieving this goal is the cultural agreement to standardize build and development practices and the agreement to use a standard technology stack.

For many organizations, the goal of automation means that they first have to agree on process standardization such as software configuration management, version control and software development methodologies across groups. From a technical perspective this also means that agreement has to be defined around the use of standard infrastructure (preferably virtual), environments and provisioning scripts.

However, the speed and quality benefits from taking on these process and technology challenges appears to be self evident, which is demonstrated by the majority of survey respondents who have indicated they plan to or are currently leveraging automation to support automated testing and deployment practices.

We use the DevOps principles of automated testing, continuous integration and continuous deployment to automate how changes are made to production and improve quality, cost and time to market





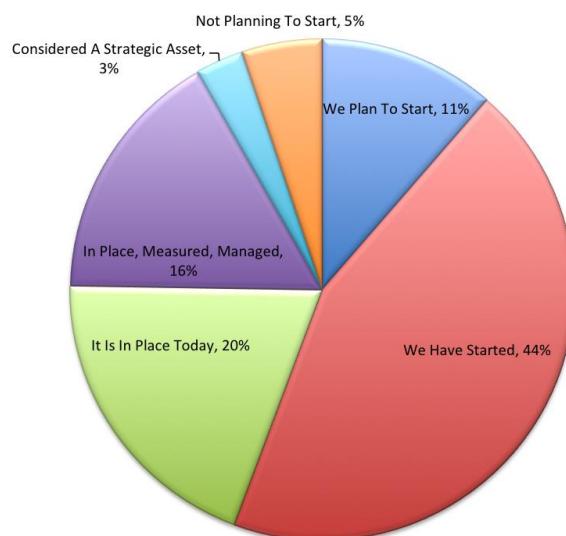
9) Functional & Non-Functional Requirements

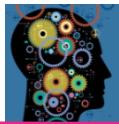
When defining customer value it's important that organizations understand that value is multi-dimensional in that customer expectation is defined by benefit realization, time to delivery, cost and risk acceptance. For example, if you provide a service that meets the organization's functional needs at a low cost but that system is highly unstable and conflicts with the need to meet external privacy legislation, this service will not be considered positive in the end. It is for this reason that an organization is not often in a position to trade speed and forego quality, meaning both functional and non-functional service requirements must be addressed based on a fit for purpose definition. The Agile principle of "Minimal Viable Product" must include both the functional and non-functional requirements. DevOps principles support this argument when they describe bringing operational requirements forward into design.

Organizations accomplish this balancing act by integrating their software development methodology with the necessary ITSM Strategic, Design, Transition and Operations processes. For example, in the use of an Agile Scrum model the Sprint and User Stories will need to include success and acceptance criteria that are defined by both the SDLC as well as the organization's ITSM processes.

The following question was used to test to what degree this understanding was shared by the survey participants. What is interesting from the response below is that the majority of the organizations understand this requirement.

**We have integrated the necessary IT Service Management Processes
into our development methods and practices to manage change/
release related risk**





10) Systemic Thinking

Technically-oriented IT cultures tend to focus on the optimization and specialization of specific vertically-oriented technology domains or platforms. This vertical organizational chart vs. horizontal orientation creates a culture of separation and lack of shared accountability. Lean addresses this issue by describing value creation in the context of horizontal value streams or systems where the various agents and participants of the system need to believe and act as if they are part of a common team with shared values, beliefs and priorities. Without this constancy of purpose across the value stream or system thinking, each of the participants acts as an independent agent being agile in different directions, therefore slowing down the flow by being agile without the context of the greater system needs. In fact, not understanding this concept creates bottlenecks and constraints throughout the system where the challenges are in the handoffs between departments versus the work done by any one team.

This is a key area where DevOps has built upon the initial adoption of Agile development methods. What was not understood by software development teams is that if you optimize only one aspect of the value chain without considering the whole you end up creating a larger backlog in front of the next down stream task. By accelerating development without including operations teams in this strategy the move-to-production processes become overburdened and actually become slower than before, as inventory levels grow in front of the current constraint. Based on this, the PTT wished to understand to what level organizations were working towards fixing this issue by creating cross-functional/system-oriented development/delivery teams. From the response to this survey question, it is clear that for most organizations this issue has only recently become a focus area.

Our Development and Operations groups work closely together in planning, designing and testing changes to increase the deployment speed and lower the risk of new service introduction or major service changes





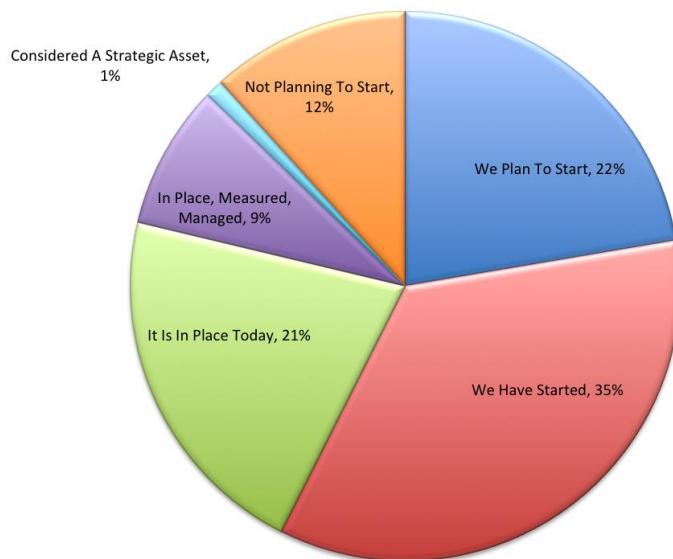
11) Small Batch Vs. Large Batch

A key tenet of both Lean and Agile is that smaller development tasks accompanied by shorter feedback loops with the Product Owner or customer results in a faster flow of delivery. This approach allows for an adaptive and iterative development cycle adjusting to customer feedback. Smaller development “sprints” also provides the ability to shift development priorities and as a result become more flexible to adjust to dynamically changing business requirements.

This principle is at the heart of Agile development models regardless of the specific approach being used such as SCRUM, Kanban, XP, SAFe, etc. An important observation made earlier in this paper is that Agile development models are at least as popular as the more linear and larger batch approaches often referred to as Waterfall. What is also important to note is that many organizations are maintaining both Waterfall and Agile approaches, adjusting as required by each service. A general qualitative observation several of the PTT members made during the session is that most organizations are at least experimenting with small batch/Agile-based development models.

The following question was asked in order to test this general observation. Based on the results of this survey question it is clear that the majority of organizations responding to this survey are indeed moving towards the use of shorter release cycles and iterative development methods focused on speed. .

We have moved to smaller and shorter term project release schedules to improve throughput, reduce development and deliver value quicker



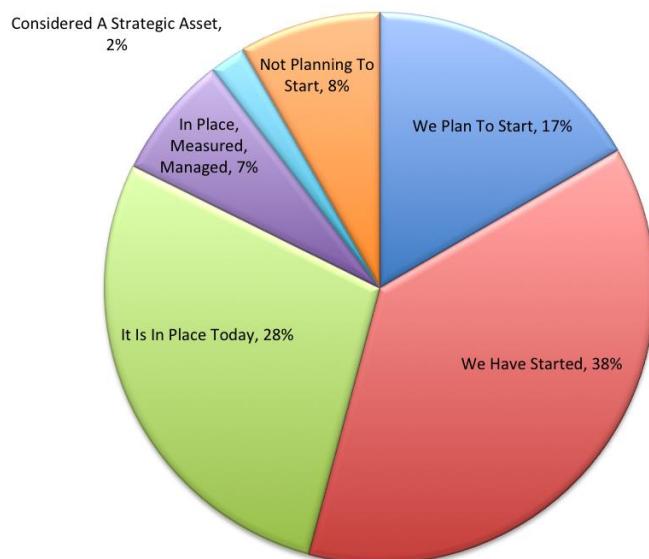


12) Business Driven Release Cadence

The questions of the survey up to this point have tested the adoption of principles and practices required to manage multi-speed organizations. However, the goal is not to simply speed up service delivery but rather to ensure that the rate of supply is equal to the rate of demand. In this context, another critical question has to be whether the business has the ability to absorb change at the rate it is being released. The DevOps principle of Continuous Deployment would seem not to take this aspect into account. One of the PTT members shared a case study from their own organization where the business came to IT and required them to slow down the changes being released into production due to the fact that business productivity was being impacted by the rate of changes to core application features and screens. To combat this challenge, a Business Release Board (BRB) was created to support the scheduling and approval of releases into production.

This example provides a scenario where different speeds are required to be managed based on the customer (outside in) perspective. The following question was asked of the survey respondents to understand to what degree they currently take the customer change absorption rate into account when planning releases. Again, what is noted is that this is indeed a challenge that is acknowledged by the majority of respondents.

We consistently match the pace of deployment or release of service changes with the pace the business can accept changes to business processes, practices and plans



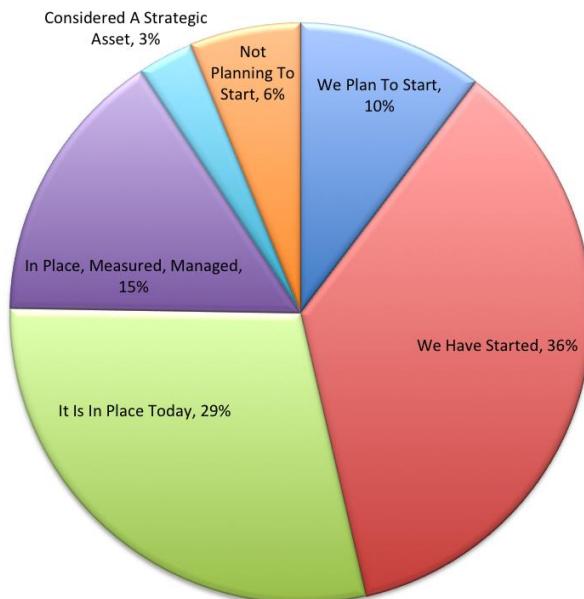


13) Deployment Success

The final question of the survey focuses on the business results being realized by the organizations responding to the survey. Business results in this context mean that they are able to deliver on their service demand in respect to both the functional as well as the non-functional requirements, meaning they are able to meet demand with an appropriate rate and quality of supply.

What is interesting to note from the previous survey questions is that for each question the majority of the responding organizations have recognized the critical success factors for improving their delivery speed, and are at least on their way to making the necessary changes if not already well established in this area. So in this context it is not surprising to see the final question regarding results generally mirror a similar distribution of the previous questions. Under 50% of the surveyed organizations acknowledged that they are currently not delivering the expected results and the majority of the remainder are somewhere on their journey to achieve this result. Very few organizations are not seeing the need for change.

The business can consistently rely on our service deployments, to meet business requirements including post change stability





14) Next Steps

As a follow up to this research paper, the PTT has committed to publishing details related to the assessment model developed during the Pink16 workshop. The objective of this whitepaper is to introduce a more detailed view of the critical enablers required to deliver on these results and the specific technical and non-technical accelerators that organizations can apply to continue their improvement journey.

For an overview of the PTT Session outputs you can review the [Think Tank Overview](#) previously recorded by Rob England and Troy DuMoulin.

In past years, the PTT has looked at:

- [Managing Complex Value Streams](#) (Multiple Suppliers)
- [IT Governance, Missing In Action](#)

You can find out more on the Pink Elephant [website](#), or in the Pink Think Tank group on LinkedIn.



About Pink Elephant

We Lead The Way!

A premier global training, consulting and conference service provider, Pink Elephant has an undisputed reputation for leading the way. We're proud of our pioneering and innovative spirit, which has enabled us to introduce and spearhead many revolutionary concepts and programs since our inception forty years ago.

About The Authors

Troy DuMoulin

Troy is considered by many to be one of the world's foremost ITIL® and ITSM experts. A passionate and experienced Executive Consultant, Troy is always willing to use his rich and extensive background to share what he knows, and is always on the hunt for more knowledge. Troy always has his finger on the industry's pulse – if there's a question about what the latest trends in ITSM, Lean, Business Relationship Management or Organizational Change Management are, he has the answer! Troy is a frequent speaker at ITSM events, a contributing author for several books focused on ITSM and Lean IT concepts, and his blog is one of the industry's most popular and informative.

Rob England

Rob was the winner of the New Zealand IT Service Management Champion for 2011, and consults in New Zealand on IT governance, strategy and processes. Internationally, he is known for his blog, *The IT Skeptic*, and has contributed to a variety of books, including the 2011 *ITIL Service Strategy* book.

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