An Idealized Design For A Networked Change Approach In A Pharmaceutical R&D Organization

Neil Conroy
University of Pennsylvania, conroy282@verizon.net

An Idealized Design For A Networked Change Approach In A Pharmaceutical R&D Organization

Abstract

Big Pharma is confronted with an unsustainable business model. This is characterized by high attrition rates for medicines under development, increasing regulatory thresholds, and technical complexity of treating diseases of unmet medical need (e.g. Alzheimer's). This has driven up the cost of drug development.

Pharma companies are using various approaches to stimulate innovation while also achieving greater operational efficiencies. This is fine in principle, however, big pharm is not known for its ability to rapidly adapt to changing business conditions.

Acme Pharma is attempting to make significant changes to the way it develops medicines. This includes multiple initiatives which have their own mandates to increase operational efficiency and effectiveness, spur innovation and increase engagement. These initiatives have encountered various barriers to their adoption.

A November 2012 HBR article by John Kotter on accelerating change provides a framework which suggests how an organization can cultivate an alternate operating system to the traditional hierarchy. A network based approach to accelerating change in the organization.

This paper will use Kotter's framework within the context of an idealized design process to formulate the current mess of improvement initiatives within Acme and based on an assessment against Kotter's framework suggest a new design of how these initiatives can work together within a network of change agents to realize their full intent and effect on the organization.

Keywords
Idealized Design, Pharmaceutical, R&D

Comments

AN IDEALIZED DESIGN FOR A NETWORKED CHANGE APPROACH IN A
PHARMACEUTICAL R&D ORGANIZATION

by

Neil Conroy

Submitted to the Program of Organizational Dynamics
in the Graduate Division of the School of Arts and Sciences
in Partial Fulfillment of the Requirements for the Degree of
Master of Science in Organizational Dynamics at the
University of Pennsylvania

Philadelphia, Pennsylvania

2013

AN IDEALIZED DESIGN FOR A NETWORKED CHANGE APPROACH IN A
PHARMACEUTICAL R&D ORGANIZATION

Approved by:

_____
Alan Barstow, Ph.D., Advisor

_____
Martin Stankard, Ph.D., Reader

_____
Jason Magidson, Ph.D., Reader

ABSTRACT

Big Pharma is confronted with an unsustainable business model. This is characterized by

high attrition rates for medicines under development, increasing regulatory thresholds, and

technical complexity of treating diseases of unmet medical need (e.g. Alzheimer's). This

has driven up the cost of drug development.

Pharma companies are using various approaches to stimulate innovation while also achieving

greater operational efficiencies. This is fine in principle, however, big pharm is not known

for its ability to rapidly adapt to changing business conditions.

Acme Pharma is attempting to make significant changes to the way it develops medicines.

This includes multiple initiatives which have their own mandates to increase operational

efficiency and effectiveness, spur innovation and increase engagement. These initiatives

have encountered various barriers to their adoption.

A November 2012 HBR article by John Kotter on accelerating change provides a framework

which suggests how an organization can cultivate an alternate operating system to the

traditional hierarchy. A network based approach to accelerating change in the organization.

This paper will use Kotter's framework within the context of an idealized design process to

formulate the current mess of improvement initiatives within Acme and based on an

assessment against Kotter's framework suggest a new design of how these initiatives can

work together within a network of change agents to realize their full intent and effect on the

organization.

ACKNOWLEDGEMENTS

LIST OF TABLES

LIST OF FIGURES

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

Purpose of this Thesis

The Pharmaceutical Development (PD) organization of Acme Pharma is attempting to transform

how they develop medicines. They're doing this within a framework of five strategic Focus

Areas which encompass about a dozen specific initiatives, some of which can be sub-divided

even further into finite projects. By many accounts most organizational change efforts fail to

deliver the expected results (Kotter, 1996). This leaves a bad taste in the mouths of those

involved. They were told life would get better and they perceive that it did not. This breeds

cynicism for the next change effort that invariably comes along. Given the breadth and scope of

the PD organization's efforts and the high expectations, there is fear that Acme could be headed

down just such a path. Currently, there are a dozen initiatives fighting for priority, resource time,

and attention from leaders and staff. In general, staff level employees don't understand the need

for change, how all these initiatives fit together, and for what goal. If our people don't have a

fundamental understanding of what's being done and why it's being done then they won't

engage in it, and unlike previous changes which were more strategic in nature, these changes

need people to get engaged and stay engaged. But certainly leadership doesn't need such time

and attention from the organization to execute these strategic initiatives. Can't they just pull the

needed levers to make the change happen themselves? This was the case in the mid-2000s when

licensing and acquisition (L&A) deals were made and restructurings executed without the full

support or involvement of the rank and file. The answer to this, of course, is 'no', the nature of

the current initiatives do not involve big levers that upper management can pull unilaterally.

This approach, although ultimately successful in the past, is not one that can be repeated often

due to the level of disruption and lingering effects on the organization. Rather, the current strategic imperatives require involvement and engagement from all levels within the organization.

So the essential question that this thesis seeks to answer is how to get this engagement so that the goals of the strategic Focus Areas can be effectively realized, in an environment with high work burden and where each initiative is at minimum a second priority, and needs to fight for a slice of any remaining time?

Big Pharma at a Cross-roads

Over the last several decades technological advances have helped increase productivity and throughput in parts of the pharmaceutical R&D process, but failed to address bottlenecks which determine its end to end effectiveness. For example, DNA sequencing has become a billion times faster than when the first genome was sequenced, additionally the advent of high throughput screening has enabled many more chemical compounds to be tested against targets (Scannell, Blanckley, Boldon, & Warrington, 2012). These advances and others have resulted in the ability of a research chemist to increase his productivity by about 8oo times through the 1980s (Scannell, Blanckley, Boldon, & Warrington, 2012). However, the number of FDA approved drugs per billion dollars (inflation adjusted) has steadily declined over the last 50 years (Figure 1) (Scannell J. W., Blanckley, Boldon, & Warrington, 2012). In fact, the number of approved drugs per billion dollars has halved every 9 years since 1950 (Scannell, Blanckley, Boldon, & Warrington, 2012). Therefore, other forces are at play which has negated technological advances in pharmaceutical R&D. These forces have become acute over the last 10 years, as the industry has had to cope with major changes.

Most pharmaceutical companies reaped huge profits as innovator organizations. These organizations discovered and developed novel medicines which treated both chronic and acute diseases in a wide range of areas from Oncology to Immunology. Many of these compounds were 'discovered' in the 80s and 90s, and focused on treating such chronic diseases as high cholesterol, and rheumatoid arthritis. Scientifically speaking these diseases were 'low-hanging fruit' in that the therapies designed to treat them worked off of relatively simple mechanisms of action. Because many of these afflictions were chronic and had low-mortality, this guaranteed pharmaceutical companies a steady stream of revenue, money that payers, insurance companies and governments, were willing to reimburse. Over the last 10 years this dynamic has slowly changed. Patents on these highly profitable medicines have been expiring, leading to a 90% loss of revenue in a matter of weeks for the innovator company. Due to high government debt and economic weakness in major economies, payers are demanding more value for the dollars they spend. Regulators also want to see new therapies demonstrate a statistically significant improvement in patient outcomes over the current standard of care. The culmination of these elements means that every new molecule needs to be substantially better than the previous. As time moves forward and therapies get more effective it becomes increasingly more difficult for the industry to better itself. This is termed the 'better than the Beatles' problem (Scannell, Blanckley, Boldon, & Warrington, 2012). Imagine that for any new song to be commercially successful it had to be better than the most successful old song in the catalogue. It would need to be better than the Beatles. As the catalogue of old songs increases it becomes even more difficult to achieve success. Such is the case with the approval of new drugs.

Regulators are also adding to the difficulty by requiring an ever increasing amount of information in new drug filings to ensure that medicines are safe. This is in the wake of high

profile drug failures like Vioxx, where the drug was approved by the FDA only having to be pulled from the market later after it was obvious that patients on this medication had heart attacks at three times the normal rate. This higher approval threshold started in earnest with the 1962 Kefauver Harris Amendment to the Federal Food, Drug and Cosmetic Act, which was introduced in response to the thalidominde scandal, a tranquilizer and painkiller whose use resulted in thousands of babies born with birth defects. The result of this legislation was to increase efficacy and safety standards, and as a result a sharp drop in approved medicines per billion dollars can be seen throughout the late 60s and into the 70s.

.Figure 1. R&D Efficiency Trends based on FDA Approvals, Adapted from "Diagnosing the decline in pharmaceutical efficiency" by J.W. Scannell, A. Blanckley, H. Boldon, B. Warrington, Nature Reviews, p. 192, March 2012.
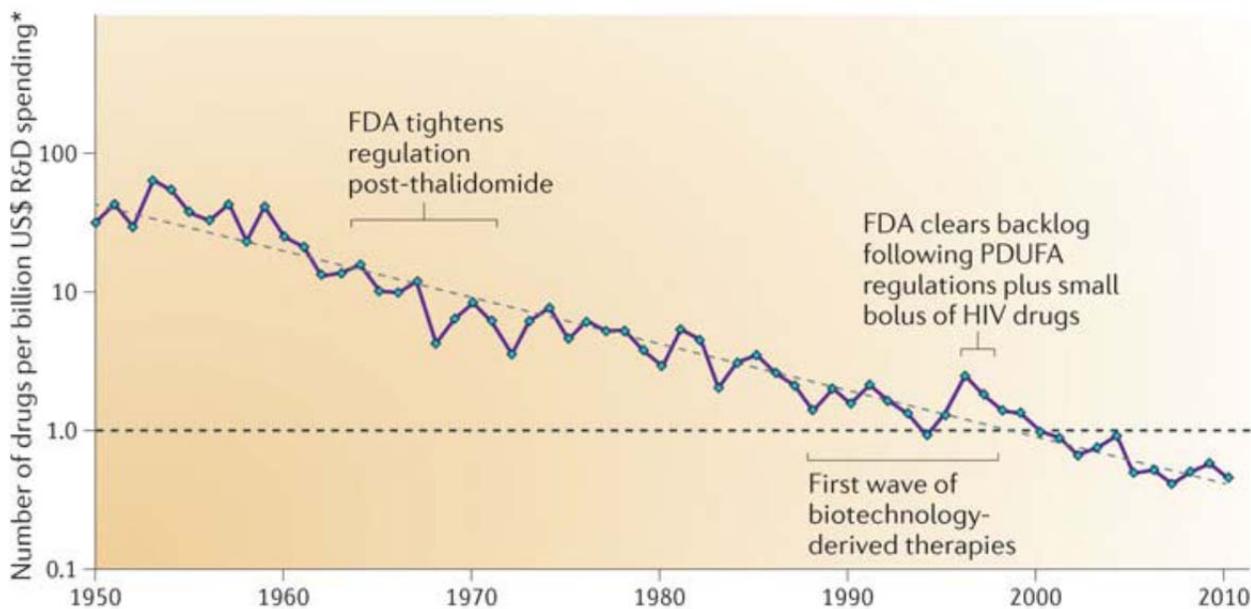
Lastly, remaining disease states are proving to have more significant scientific challenges, which make developing therapies more technically challenging and costly.   Most pharmaceutical companies have seen their attrition rates on medicines go as high as 90%, meaning that for every 10 therapies that start the development process 9 will fail for one reason

or another (market factors, technical feasibility, cost feasibility, efficacy). All of these issues have increased both the cost and risk associated with developing pharmaceutical therapies.

Acme Pharmaceutical Company

The company in question, let's call them Acme Pharmaceuticals, has been subject to all of these issues and has reacted in numerous ways. The focus of this paper will be on Acme's Pharmaceutical Development organization. The Pharmaceutical Development (PD) organization is an integrated commercially focused end-to-end Chemistry Manufacturing and Control (CMC) organization responsible for development, clinical supplies, technology transfer to commercial manufacturing, marketed product support, and technical life-cycle management of chemical and biological pharmaceutical products. The organization includes over 1200 people across the globe that have the responsibility for developing products and bringing them to patients in a timely manner. Major clusters of the organization exist on the US East Coast, in Western Europe, and in Asia. The primary make-up of the organization from a personnel point of view is people with scientific degrees in fields such as chemistry and molecular biology. Many, especially in the management ranks, hold advanced degrees such as PhDs. Key stakeholders for this organization include; therapeutic areas (e.g. Oncology) within the R&D organization; Commercial Supply Chain operations which includes commercial manufacturing, and many partners, suppliers, Contract Manufacturing Organizations (CMOs), and Contract Research Organizations (CROs). Key challenges for the organization include;

- Increasing capacity to prosecute a large development portfolio while controlling costs
- Leveraging global spread to match Acme's commitments with available capacity and capabilities
- Building and retaining the knowledge needed to manage products effectively through their entire lifecycle

- Adapting to evolving global regulatory expectations

- Timely delivery of commitments to the various stakeholders

- Building a culture that enables the organization to overcome and leverage the challenges and opportunities they face by increasing its ability to change and adapt

Acme Strategy for Improvement

In the mid-2000s Acme was facing several specific challenges, some of which were derived from the larger pharma industry dynamics described earlier. Many of its most successful compounds were going off patent, which resulted in billions of dollars in revenue evaporating. Secondly, the overall productivity of its R&D organization was not replacing these products to offset the patent losses. Lastly, the financial crisis of 2008 hit, and while it didn't affect the pharma industry as much as other industries, it nevertheless was the last factor in a perfect storm of issues that resulted in declining revenues and increasing cost. Clearly something had to be done. Business leaders took two major actions to turn this situation around. The first was to look for outside joint ventures or acquisitions of companies or products which would refill the product pipeline. The second action was to restructure the existing internal organization. The PD organization felt the effects of both of these moves. In 2009-10 it was re-organized with a resultant loss of about 15% of the workforce. In the years and decades before this crisis Acme had never experienced this type of situation or the need to reduce the workforce by such a substantial amount. The effect on the organization was significant in terms of the loss of trust that resulted. Some of this is still evident today and will come to affect the strategic initiatives currently ongoing. Additionally, management was successful in acquiring new compounds from outside the organization. The result of this was that PD suddenly had to mobilize development activities for these molecules. The nature of licensing and acquisitions is that there are contractual obligations attached to development milestones. Very often this means that the licensed product get higher

priority than the internally discovered products. So the overall effect of both of these moves was an increasing and sometimes volatile workload in an organization which reduced headcount substantially. This high work burden is an underlying issue which will come back later in this narrative.

However, despite the stress and shock on the organization the actions taken had a very positive effect on the business. Through both external deals and internal discovery the organization was able to obtain approval on a record number of new therapies, many of which are very commercially successful and also address areas of high unmet medical need in such conditions as diabetes and cancer. In fact Acme is currently considered one of the most productive big pharma companies in the world. With this recent success as a backdrop the company set about building on this strength for the future.

The nature of pharmaceutical development timelines means that the development portfolio needs to be recreated every 5-7 years, so with a projected decline coming in the later part of this decade Acme needs to take action now to ensure its success then, knowing that all of the broader industry dynamics are real. For the PD group this meant the development of the strategic Focus Areas of Productivity, Network Coordination, Science, Quality, and People.

The first Focus Area of Productivity has a goal to realize a significant improvement in both development speed and efficiency (resources needed per molecule under development) and moreover to increase overall capacity while controlling costs. This carried with it an aggressive goal of 4-5% productivity increase on an annual basis for the next 4 years. The second Focus Area of the strategy is Network Coordination. The goal here is to create a strong global development network between PD and other CRO partners, most of which are in lower cost Asian countries. Pharmaceutical development is inherently variable with many projects stopping

and starting over time. Resource needs don't always align with portfolio changes, therefore having development partners who can provide auxiliary resourcing for certain skill sets allows the organization to be more flexible in meeting its customer's needs. A secondary goal is to put into place robust planning and control systems which enable a higher degree of coordination of complex development projects globally. Given that this is a scientifically based organization its logical that the third Focus Area is Science. The goal of this Focus Area is to invest in and leverage the best available science as well as maintaining strength in key technological areas. This scientific strength should have particular relevance to patient safety, product quality, regulatory compliance and operational efficiency. The fourth Focus Area is Quality, with the goal being to establish a foundation of consistent, reliable, right first time development, which consistently meets the standards of the pharmaceutical industry. The fifth and last Focus Area is People. None of the previous Focus Areas could be achieved without capable people who are engaged in their work and who work together in a culture of collaboration. This also includes developing people to succeed, including the development of the next generation of leaders.

Thesis Approach

Given the situation in the pharmaceutical industry and Acme pharma, there is a need to ensure that the changes undertaken by Acme are realized and effective. In subsequent chapters of the capstone the framework and theory for organizational change and employee engagement will be documented. Furthermore, the capstone will explain how an Interactive Planning approach will be used in the context of a change framework to design an improved approach to the execution of Acme's change. Interactive Planning is an approach developed by Russell Ackoff, within the realm of Systems Thinking. Within this approach, subsequent chapters will deal with the Mess Formulation of the current situation. The current mess within Acme will be developed against

the accelerators of change documented by John Kotter. The Ends Planning will also be documented and will be inclusive of a new design for propagating the change within Acme. It will outline key elements of transformational change and the employee engagement which should accompany it, along with a design for a new mode of interaction and cooperation aimed at generating greater engagement within the organization towards the defined Focus Areas. This will result in a design which explains how to create and maintain the volunteer army described by Kotter as well as the role management needs to play. It also will suggest how the strategic initiatives outlined could work more closely via this networked approach to change.

This is primarily a thought exercise and not a full scale Idealized Design activity supported by Acme's management. However, it will draw on real life feedback from different sources within Acme to formulate the mess and construct the design.

CHAPTER 2

LITERATURE REVIEW

Change Management Processes

There is a perception among many in today's business environment that change is accelerating

(Todnem, 2005), and that those organizations that don't adapt fast enough will not perform to

expectations and may not even survive. Additionally, some studies cite the failure rate of change

initiatives as high as 70 percent (Hailey & Hailey, 2004). Born out of this ever increasing need to

change comes a variety of change theories and practices, many of which have very little data to

back them up (Armstrong & Guimaraes, 1998).

Change can be characterized in many different ways, such as by the rate of change, which can be

discontinuous, incremental, or continuous, or by how it comes about, either planned or emergent.

The school of emergent change is currently the most prominent. Emergent change is based on

the notions that change is an ever evolving situation with multiple variables at play. It

emphasizes the notion that people and organizations need to be prepared for change, and that

change must be managed. In the world of emergent change many models exist with some of the

more well-known being Kanter's Ten Commandments for Executing Change (Kanter *et

al.*,1992), Kotter's Eight Step Process for Successful Organizational Change and Transformation

(1996), and Luecke's Seven Steps (2003).   The similarities and difference of these three models

can be seen in table 1 (Todnem, 2005).

Table 1. Comparison of Selected Change Approaches

Kanter *et al.'s* Ten Commandments for Executing Change	Kotter's Eight Step Process for Successful Organizational Transformation	Luecke's Seven Steps
1) Analyze the organization and its need for change		1) Mobilize energy and commitment through joint identification of business problems and their solutions
2) Create a vision and a common direction	3) Developing a vision and strategy	2) Develop a shared vision of how to organize and manage for competitiveness
3) Separate from the past 4) Create a sense of urgency	1) Establishing a sense of urgency	
5) Support a strong leader role 6) Line up political sponsorship	2) Creating a guiding coalition	3) Identify the leadership
7) Craft an implementation plan 8) Develop enabling structures	5) Empowering broad based action	
9) Communicate, involve people and be honest 10) Reinforce and institutionalize change	4) Communicating the change vision 8) Anchoring new approaches in the culture	6) Institutionalize success through formal policies, systems, and structures
	6) Generating short term wins 7) Consolidating gains and producing more change	
		4) Focus on results, not on activities 5) Start change at the periphery, then let it spread to other units without pushing it from the top 7) Monitor and adjust strategies in response to the problems in the change

In his 1996 HBR article Kotter enumerated an 8 step change process. It was based on his study

of change efforts in over 100 companies, some of which went well, but most of which did not

live up to expectations. He found that most organizations made predictable mistakes. These mistakes were made by competent managers who lacked experience with making successful change.

More recently Kotter documented an update to his eight step approach, in his HBR article, Accelerate (Kotter, 2012). In it he postulates that the traditional organizational hierarchy is not equipped to manage the design and implementation of strategic change, because it is too busy managing the day-to-day business, and too resistant to today's demands of rapid change and flexible strategy. Hierarchies are in fact designed to manage established processes such as budgeting, hiring and firing, and tracking business results. These hierarchies are inherently risk averse and resistant to change because hierarchies provide the structure in which our status and power reside, and therefore the current holders of this power and status will be loath to mess with it. Essentially, hierarchies crave stability, and any credible strategic change initiative obviously is a challenge to this stability. He advocates that a second operating system is necessary, one that operates in conjunction with the traditional hierarchy. This second system is based on network principles and draws on a volunteer army of people to design, implement and modify strategic change.

On the surface the new Accelerators of Change look remarkably similar to the original 8-steps. In his HBR article Kotter outlines the distinction as follows;

> There are three main differences between those eight steps and the eight "accelerators" on which the strategy system runs: (1) The steps are often used in rigid, finite, and sequential ways, in effecting or responding to episodic change, whereas the accelerators are concurrent and always at work. (2) The steps are usually driven by a small core group, whereas the accelerators pull in as many people as possible from throughout the

organization to form a "volunteer army". (3) The steps are designed to function within a traditional hierarchy, whereas the accelerators require the flexibility and agility of a network (Kotter, Accelerate!, 2012).

Table 2. Kotter's Original Change Method vs. Eight Accelerators of Change

Kotters' Original 8-step Change Method	Kotter's 8 Accelerators of Change
Increase Urgency	Create a Sense of Urgency around a Single Big Opportunity
Build the Guiding Team	Build and Maintain a Guiding Coalition
Get the Vision Right	Formulate a Strategic Vision and Develop Change Initiatives designed to capitalize on the Big Opportunity
Communicate for Buy-In	Communicate the Vision and Strategy to Create Buy-In and Attract a Growing Volunteer Army
Empower Action	Accelerate Movement Toward the Vision and the Opportunity by Ensuring that the Network Removes Barriers
Create Short Term Wins	Celebrate Visible, Significant Short Term Wins
Don't Let Up	Never let up. Keep Learning from Experience. Don't Declare Victory Too Soon
Make Change Stick	Institutionalize Strategic Changes in the Culture

Given that the field of emergent change has settled on models which are relatively similar and empirically based, I make the assumption that they're good models to apply to Acme's situation. Although there is a track record of success that has led to the development of Kotter's model, it's

not without its challenges when applied. Kotter enumerates five key principles by which this new operating system functions which are summarized in Table 3 (2012).

Table 3. Kotter's Five Key Principles Associated with his Dual Operating System

Principle	Explanation
1. Many change agents, not just the usual few appointees	The engagement of a large number of people for part-time involvement in the change, as opposed to relying on the same few people to work it full time.
2. A want-to and a get-to (not just a have-to) mind-set	People need to want to be change agents and feel that as change agents they have the power to make the change happen. They need to have the 'spirit of volunteerism"
3. Head and heart, not just head	People need to be motivated to participate not only by logical arguments based on a business case. Rather there must be an emotional element that drives their engagement
4. Much more leadership, not just more management	Leadership is about vision and inspired action and management is about project management and budget reviews. The secondary operating system needs more of the former.
5. Two systems, one organization	The network and the hierarchy must be inseparable and in constant communication.

Elements 2, 3, and 4 in Table 3 really speak to the essential components to be explored when developing the Idealized Design for Acme's change approach based on this model. Key questions include:

- What are the dynamics involved in actually creating the volunteer army, in terms of how to 'enlist' the volunteers?

- How should this army be led, incentivized, and rewarded so that it is sustainable and continues to grow?

How to 'enlist' the volunteers

A central element of Kotter's Accelerators is the secondary operating system which relies on a 'volunteer army' of people who are there to propagate the change. These people don't just magically appear, they are somehow motivated to get involved. How does an organization create the spirit of volunteerism, especially when most employees are disengaged from their organizations? Studies have suggested that large percentages of employees are disengaged from their organizations. Gebauer & Lowman estimated that less than 30% of the global work force is engaged (2008). People will volunteer because they either want to do something for themselves or they want to do something for others. If someone wants to do something for themselves they are seeking *self-enhancement*. This is a primary driver of engagement and behavior change. "Self-Enhancement is the desire or observed reality of seeing oneself and by extension one's actions, traits, and attitudes in the most positive light" (Pfeffer & Fong, 2005). This can mean attempting to increase their status and relationships with the leaders within the organization. Leaders are perceived as the 'winners', and of course everyone wants to be associated with winners because one may become a winner as well. At minimum people desire an increase in their own status, with this status might come increased influence and power.

Another element of the self-enhancement motive which plays into the formation of the volunteer army is whether we see this group as being part of the inner circle or a favorable group in the eyes of other high status people in the organization. This can be a driver to join the group and once joined we invariably see the group in a positive light and others not in the group are 'black sheep' (Pfeffer & Fong, 2005).

Besides our own self-enhancement and desire for power and influence the motivation to help others may also be a part of enlisting the volunteer arm. This pro-social motivation is the desire to benefit others from our own actions (Grant & Berry, 2011). Contact with the beneficiaries is what gives employees first hand exposure to those who are affected by their work. These beneficiaries can be true customers and clients of the business as well as internal customers and stakeholders within the business. Research by Grant has shown that employees perceive greater pro-social feelings after having had *beneficiary contact* and this pro-social feeling is associated with higher effort and job performance (2012). This seems intuitive in the sense that if I know the beneficiaries of the change and I meet them, then I will positively identify my contributions with the benefit received by these people which is also a form of self-enhancement. At Acme the beneficiaries of the change effort will be patients who will have their unmet medical need addressed more quickly. This may be a little far flung for most of the potential volunteers we're trying to enlist. A beneficiary closer at hand could be the volunteers themselves. For example, the target of some of the initiatives at Acme is around the effort needed to develop medicines. If this effort is reduced then the high work burden might be alleviated, making the volunteers themselves beneficiaries.

Availability bias is a corollary Grant identified to this hypothesis of beneficiary contact. Availability bias is based on work by Tversky & Kahneman and others. It says that people perceive a disproportionate effect of certain events because of their sensational nature or an associated emotional reaction. For example, a study by Slovic and Lichtenstein found that people perceived death by disease to be as likely as accidental death, when in reality the former is 18 times more likely (1982). The general public has a skewed perception of likelihood based

on the frightening nature of dying in an accident, and the associated coverage these events get in the media.

For Acme's purpose we can use beneficiary contact and the availability bias to generate pro-social motivations in our perspective volunteers. This can be done by creating a visceral memory for employees that is easily accessible and has the effect of generating a disproportionate notion of benefit.

This pro-social motivation means that the employee can then see how their contributions have a positive impact. The underlying driver of this motivation can be because the employee feels it's the right thing, because they care about the people who would benefit, and because it helps them maintain membership in a group (Grant & Berry, 2011).

Pro-social motivation is only one type of motivation employees can have, they also have intrinsic motivation. Intrinsic motivation, as the name suggests comes from the areas of interest that people have within themselves and the desire to pursue those interests. Employee interest and desires however need to result in useful ideas and not folly. To ascertain usefulness one needs to take others' perspectives, and in doing so the likelihood of developing a useful idea is increased. When someone is intrinsically motivated they are more creative, motivated, and show greater persistence towards complex problems (Grant & Berry, 2011). Therefore it is the intersection of intrinsic motivation and pro-social motivation that is of interest. Grant hypothesizes that pro-social motivation strengthens and directs intrinsic motivation to be more useful and proposes that perspective taking is a key element in developing pro-social motivation (Grant & Berry, 2011). Perspective taking is defined as "a cognitive process in which individuals adopt others' viewpoints in an attempt to understand their preferences, values and needs" (Parker & Axtell, 2001). If employees have assimilated others perspective around an issue they have a framework

to decide what ideas are more useful. Therefore, a potential mechanism to enlist the army is to facilitate perspective taking. If functionally diverse groups of employees can be given opportunities to discuss the strategic imperatives together and with immediate customers they can then find those areas which interest them at the same time they see the possible benefits. This may motivate them to get involved. In a recent leadership team meeting with PD management a poster session was conducted with all of the Focus Areas. It gave the participants and opportunity to internalize and understand each Area, and see how they may benefit.

Much of the discussion on beneficiary contact and perspective taking is about inducing the positive aspect of pro-social motivation. However, what may drive people to stay disengaged with a company-wide transformation effort is not the absence of a positive force like pro-social motivation but the presence of a negative force. Nobel Prize winning psychologist Daniel Kahneman talks about these forces in his book, *Thinking Fast and Slow* (2011). One of these effects is the *Certainty Effect,* which causes us to overvalue uncertainty and give less weight to likely outcomes, or more weight to unlikely outcomes. If a company wide re-organization will have the effect of reducing headcount by 5%, we naturally overweigh that 5% thinking that 'it could be me', which may cloud our own decision making around whether to pre-emptively take a job at another company. Given that Acme had a layoff in 2009/10 it's not surprising that certain employees look upon the new strategic imperatives as a possible threat to their jobs, even though the likelihood is very low given Acme's strong drug pipeline. Over time this feeling seems to have diminished especially now that people are seeing and feeling the effects of the strong drug pipeline in the form of more approvals from health authorities and more development work.

Another of these effects is *Loss Aversion*, which is the general notion that "losses loom larger than gains" (Kahneman, 2011). The reasons that loss looms larger have to do with our survival

instinct as people. All animals in fact overweigh loss as a protective mechanism in the wild and this has stayed with us in our everyday decision making even when the stakes are not life and death. The kind of change Acme is engaged in does involve tradeoffs, with respect to roles and responsibilities. In these circumstances again we see employees being loss averse, because we are talking about their survival in the organization, most likely not in a literal sense but their survival in terms of preserving their role and current level of status. Our success in creating an effective networked change approach will hinge on overcoming loss aversion and the certainty effect.

In summary, recent work by Grant has postulated several hypotheses about *intrinsic and pro-social motivations* as related to leadership vision, beneficiary contact, and perspective taking. Essential elements of Kotter's Eight Accelerators of change are to develop many change agents and to do this they have to want to get involved and wanting to get involved is both a cognitive and emotional process. This 'wanting to' is really our intrinsic and pro-social motivations. Those motivations are stoked in several ways, such as by leadership and the vision they put forth. This vision may be better assimilated if employees have contact with its beneficiaries both internal and external, to see and hear their needs and how elements of the vision may have had a positive effect. This enhances leadership's credibility with respect to their vision and also plays on the availability bias we all have towards strong examples, although such examples may not be proportionally relevant. Additionally motivations are developed by perspective taking of others, so if employees know the needs of others this helps them filter creative ideas generated via their intrinsic motivation towards useful ideas that they will act on. These motivations must override our natural human tendency to be loss averse and to overweigh unlikely outcomes.

<u>Leadership of the Volunteer Army</u>

If we take the notion of a volunteer army a bit more literally then we need a General for this army. The picture that comes to mind with this metaphor is that of a paternalistic figure, stern and strict but also benevolent to the troops. At Acme we obviously do not have Generals but we have executives and leaders who are ambitious and challenging. This is within a culture that is consensus driven and polite, not as authoritarian and hierarchical as the military. Rarely are 'orders' given. Therefore, it is incumbent on leaders to employ a certain type of leadership which is less like a General or even a typical corporate manager, in order to effectively enlist and lead this change. Leaders can do this in a number of ways, they can either emulate the change by 'walking the talk' themselves, or they can bring in or elevate someone else as a model to emulate (Schein, 2004). Once this new behavior is defined it effectively means that there is a new standard for evaluation based on the desired behaviors. Leaders can also take a facilitative approach to supporting the change by helping those in the organization make sense of what is happening and building organizational capacity and capability for change. Regardless of the means Leaders can reward those who emulate desired behaviors by promotion, pay or positive recognition, or they can punish those who don't sufficiently emulate the behavior. These are forms of coercion, both positive and negative. There are considerations around what type of coercion should be used and under what circumstances. This might be based on whether leadership has sufficient 'power over' people (Ackoff, 1994). Power over people is getting them to do what you want them to do, and what they wouldn't ordinarily do voluntarily. This generally involves having the authority to punish or promote, and is usually associated with authoritarian, and autocratic environments. The alternative to having power over people is to have 'power to', which is the power to get people to do what you want voluntarily, the ability to

'lead' with a decreased reliance on 'command' (Ackoff, 1994). Given Acme's consensus culture

leaders will need to use greater 'power to' because 'power over' is less of a factor. The

education level of Acme's employees in PD is very high, which typically reduces 'power over'.

In fact within organizations with highly educated populations, 'power over' and 'power to' can

be negatively correlated (Ackoff, 1994).

Although a command and control approach might have reduced effectiveness in Acme's culture

it's still worth considering how 'power over' can be used. For example, very often the crucial

leadership effort resides and possibly stalls at the middle management level. These are folks

whose quality of work life can be less than those at lower levels in the organization. They have

many roles and responsibilities which they need to juggle such as; implementing the strategic

priorities of upper management, dealing with the people under their charge, and making sure that

the day to day deliverables get met. Cut backs in areas which traditionally offered support to the

middle manager, such as Human Resources, has compounded their burden. Given this, their

cynicism and feelings toward the organization can sometimes be worse than those below them

and lately their job security has been more perilous as well. While we can try to enlist the army

on a volunteer basis by engendering pro-social motivation, those in leadership positions need to

be drafted in to this army. Their participation is essential and negative coercion in particular is a

part of obtaining it, however too much negative coercion or threat of punishment could result in

an increase in defensiveness. People are rarely dismissed for performance reasons at Acme and

even when there is a performance gap the organization usually strives to re-assign the individual

with the genuine goal of having them positively contribute. However, these re-assignments seem

to happen more in the management ranks than in staff positions. Therefore, current managers

may indeed have a real fear and therefore respond to negative coercion. This is truer amongst

staff at higher pay grades, managers and directors, than those at lower levels. Once again we see loss aversion coming into play, but this time at the leadership level.

As far as 'power over' people with respect to positive aspects of coercion, recent employee surveys at Acme have shown that people want more developmental pathways and opportunities which may indicate that mechanisms such as pay, promotion and praise have leverage but at lower levels in the organization.

So it seems that different mechanisms might work for different levels of leadership at Acme. For middle management it's the use of power over with negative coercion, and for those at lower levels of leadership or potential leaders its power over with positive coercion.

As previously suggested because of its culture and makeup of its workforce, 'power to' may be more effective as a leadership mechanism to drive change within Acme. Some literature has postulated that behavior shaping via coercion is a negative factor in complex change situations (Higgs & Rowland, 2005). The same studies suggest that positively correlated leadership behaviors include framing change and building the capacity for change. Both of these behaviors are facilitative and enabling rather than directive.

Of the positively correlated behaviors framing change is the act of helping people to make sense of the change, its impact on them and the direction of organization. Grant argues that most transformational visions are vague and hard for most employees to conceptualize, as well as seeming to be too far in the future to be relevant. The credibility of the transformation vision needs to be established, otherwise employees just hear new rhetoric which isn't backed up by action. This can be achieved through beneficiary contact if "beneficiaries can strengthen the credibility of the leader's vision by providing firsthand testimonials from a relatively neutral, knowledgeable third-party source" (Grant, 2012).

The other positive correlation factor mentioned by Higgs and Rowland was enhancing organizational capacity. Although this isn't precisely defined they do suggest that it isn't only about capacity but also includes capability, which would include ensuring that others have the time, skill set and perspective to pursue change. This could mean positioning the change initiative as a development opportunity for people, allowing them the time to pursue it and coaching them through the process. This once again brings us back to positive coercion with praise and promotion as potential payoffs but because it's a 'power to' situation these enticements are not prominent, rather just lurking in the background. Indeed because Acme has thinned out its management ranks in the last reorganization there aren't as many opportunities to be promoted, so the conversation has shifted to development within a particular area. To enhance this, Acme created a scientific track for people to progress along, which is distinct from the traditional management track. Additionally, Acme has also created a program which uses a rotational assignment approach, as a vehicle to improve the business and to expose and develop individuals in diverse areas.

Arguably, Kotter's original model was more of a leader centered directive approach to change. Indeed, he wasn't alone in formulating this type of model, as others of this type are most frequently used. These models speak to what the leader must do and to whom he/she should do it to. Kotter's iteration of this to a networked centered approach is an acknowledgement that it is the recipients of change who need to be more engaged in the process. Change is no longer something 'done' to them, rather something they need to be a part of. This is especially true when we think of organizations as social systems. The knowledge workers within these organizations probably know their jobs better than their bosses and therefore have the power to stifle most change efforts. This is in sharp contrast to thinking of organizations as mechanistic

entities which are ruled in an autocratic command and control fashion by leaders who have 'power over'. In Acme's case negative coercion via 'power over' will have little effect as a leadership approach on enlisting staff or sustaining the change effort, but could have a more pronounced effect on middle management leaders worried about maintaining their status. They are required participants in this endeavor, and they must lead via a 'power to' approach which develops organizational capacity and capability, and helps others in sense-making of the change. Their use of negative coercion should be minimized as it will most likely result in defensiveness and avoidance.

Systems Thinking

The Interactive Planning Methodology, or alternately referred to as Idealized Design, will be used to design the new change system within Acme based on Kotter's principles. Interactive Planning was popularized by Russell Ackoff and has shown to be an effective means to propel change in social systems (Ackoff, Magidson, & Addison, 2006). Systems Thinking is a domain which is central to our conception and understanding of complex situations. A system is defined as a complex whole whose function is dependent on parts and the interaction of those parts (Jackson, 2003). These parts do not fulfill a useful purpose outside their containing system. For example, an airplane is a mechanical system. An airplane has many different parts such as the wings, engines and landing gear. Each one of those parts cannot function without the other. The wings cannot fly themselves; they need to interact with the engines, fuselage, etc. in order to fulfill their intended purpose. There are many different types of systems besides mechanical systems, such as biological systems of which human beings and cells are examples, and social systems such as tribes, neighborhoods or corporations.

Ludwig von Bertalanffy, a biologist, first argued that organisms should be studied as systems, because the behavior of an organism, like a cell, could not be explained via an examination of its parts in isolation. (Jackson, 2003). It was he who published an article defining open systems, ones that have to interact with their environments such as organisms, and closed systems which do not have this interaction. Von Bertalanffy's influence extended beyond biology as he theorized that systems, no matter their domain, had certain characteristics in common. He set to define those characteristics in a 'General Systems Theory' (1968). General Systems Theory was adopted by management and social science thinkers in the study of how organizations and other communities of people function. Acme's PD organization is a social system, and within it we seek to create a sub-system, the secondary operating system that Kotter specifies.

Systems need to have a purpose; a biologic organism's purpose is to survive. This is an innate purpose, which the organism itself may not even be conscious of. Social systems like companies also have survival as a purpose; however there may be other purposes of the system. These 'secondary' purposes are those which are defined by the people within the system. So a system must be purposeful, and in a social system with multiple purposes, those purposes are derived from different stakeholders within the system. It is the mindset and worldview of these stakeholders that form their notions of what the purpose should be. This mindset and worldview are shaped by an individual's cultural background, experience, philosophy, beliefs and values. There are several Systems Thinking approaches which seek to understand these different worldviews and synthesize them into a picture which explains how a system operates or how it should operate. One of these is Interactive Planning, the others being Strategic Assumption Surface Testing and Soft Systems Methodology.

After World War II, returning GIs desired more fulfilling jobs and wanted to have their concerns

addressed; it was also the advent of the knowledge economy and the 'Knowledge Worker'.

Managers began to be aware of the desires of their people, the communities they operated in, and

society at-large. They began to think of their organizations as social systems, which operated in

the societal containing system (Ackoff, 1994).   The performance of any organization is largely

based on the performance of its employees. In the mechanistic view of organizations this

performance was limited to repetitive mundane tasks, an environment in which employee

alienation was arguably less of a factor. However, in a world where organizations are social

systems, performance can be affected more by a dis-satisfied workforce. Ackoff argued that

quality of work life was an important predictor of organizational performance and the best way

to improve this is to let employees participate in the improvement of the system (1994). After

all, they are the best people to know what actually dissatisfies them, not the boss, however well-

meaning. It is "participation, which is a form of self-determination, is itself a major source of

satisfaction" (Ackoff, 1994). So there is the direct improvement made by the improvement

itself, and the secondary effect of the feeling one gets from being empowered to work towards an

ideal. Although Ackoff's conclusions are experientially based and not research based, they do

seem to back up the networked change approach outlined by Kotter and the theories promulgated

by Grant. That what motivates people is movement towards a better tomorrow, which is vivid

and real and viable, and which they are a participant in making happen.

CHAPTER 3

METHODOLOGY

Principles of Interactive Planning

Interactive Planning is a process defined by Russell Ackoff to deal with the complex problems

he saw in the post-war era he called the 'systems age'. The systems age is an age characterized

by rapid and constant change. Given the complex nature of the problems in question the old

paradigm of problem solving by reduction and analysis was no longer adequate.

Interactive Planning is an example of discontinuous improvement. Continuous improvement,

especially as practiced by Japanese industry in the early days of TQM (Total Quality

Management) relied on a continuous stream of small incremental improvements which

accumulated over time leading to noticeable improvement in the business. Discontinuous

improvement is just the opposite; it is aiming for the big leap forward.

To get this big leap several principles must be followed to ensure the integrity of the Interactive

Planning process. These principles are; participation, continuity and holism (Jackson, 2003).

Ackoff argued that participation was an essential ingredient in Interactive Planning because the

more participants you have the greater the opportunity for organizational learning, which

enhances the likelihood that the plan will be successful. Although Interactive Planning is not

continuous improvement, it is continuous in nature. The steps associated with Interactive

Planning are laid out in a sequence, however they can occur simultaneously and the plan itself is

expected to develop iteratively and continuously. Ackoff described an iteration of the plan as

being akin to a snapshot taken from a film, in that it's not indicative of the entire film, which

keeps on moving forward (1999). Lastly, because of the acknowledged interdependencies and

interactions within the system we're planning for, it follows that the planning process must be

holistic in the sense that we will re-design all its elements simultaneously and interactively to ensure that we are truly re-designing the system and not its parts in isolation.

Interactive Planning derives its name not from how it goes about solving problems, "interactively", but about the nature of problems. Problems aren't really problems at all they are 'messes', or systems of problems. These systems and their problems are interactive in nature, which is what makes them systems in the first place.

Interactive Planning Process

The Steps of Interactive Planning are as follows;

- Mess Formulation
- Ends Planning
- Means Planning
- Resource Planning
- Implementation and Control

I will give a brief description of each of these elements and then proceed to outline deliverables I plan to produce in conjunction with redesigning Acme's approach to organizational change using Kotter's network model.

Mess Formulation

The aim of this step in the planning process is to describe the current system and its associated problems, which we call the mess. Once the mess has been constructed we conceptualize a situation in which if we continue on the present course the mess will result in the failure of the endeavor, which could be the demise of the organization or in this case the failure of the transformation effort to bring about the desired results. Deliverables for this section include:

- A systems analysis: Using Kotter's 8 Accelerators as the framework for an Is/Is Not table.

- Creation of a Current Reality map to show the flow of causation including the undesired effects (UDE). An affinity diagram will be the precursor of this, constructed from feedback obtained during the PD group's annual management team meeting, as well as other sources.

- A reference projection and reference scenario in narrative form.

Ends Planning

Ends Planning is arguably the heart of the Idealized Design process. This is the stage where the participants define what the ideal future state looks like. From this design, gaps can be identified between the ideal state and what currently exists. Deliverables for this section include:

- A list of specifications and desired properties using Kotter's change accelerators as a framework. The design team will brainstorm the specifications based on the prompt, "how do we drive engagement in the strategic imperatives".

- The idealized design itself will be expressed in narrative form. It will be the closest approximation of what the participants believe can be obtained in the organization.

- Both the specifications and the Idealized Design will be generated by a small team within the organization. This team will include the leaders of some of the change initiatives as well as change agents throughout the organization.

- Gaps between the current state and the most realistic approximated design will be identified.

Means Planning

Means Planning involves identifying how the design gaps will be closed. This stage is akin to developing the 'working drawings' for the design (Ackoff, 1999).

- Classification of gaps from the current mess to the idealized design can fall into the following categories.

    o Things to be added

- o Things to be eliminated

- o Things to be changed

- Identification of the types of means needed to close the gaps (Ackoff, 1999).

  - o Acts

  - o Courses of Action or Procedures

  - o Practices

  - o Processes

  - o Projects

  - o Programs

  - o Policies

Ends and Means are only different due to the timeframe involved. An End is just a Means towards an even more distant End.

Resource Planning

In this section I will identify as best as possible the key resources needed to execute the prioritized means which are key to the Idealized Design. These resources will only be identified categorically; money, capital goods, people, consumables, information. The questions of how much, when, and where will not be addressed as well as specific difficulties associated with obtaining the required resources.

Implementation & Control

The purpose of this element of the Interactive Planning process is not only to implement the design but to develop and install a Learning and Adaptation Support System, because "control without learning may improve performance but not eliminate repetition of mistakes" (Ackoff, 1999). Such a system is meant to take in information and data, with the goal of generating

knowledge and wisdom necessary to make adaptations in the design based on changing

circumstances in the business.

In this section the design team will suggest data and other information necessary to ascertain

whether the design is having the desired effect. It will also recommend who should look at this

information, how often and what they should strive to learn from it. However, the team will not

go so far as to design a Learning and Adaptation Support System.

CHAPTER 4

EXECUTING THE STRATEGY….THE CURRENT MESS

Scope of the Current State Mess

The essential question of this thesis that was proposed in chapter 1 is how to get higher

engagement from the organization so that the goals of the strategic Focus Areas can be

effectively realized. This is based upon the notion that most change efforts fail to deliver the

desired result and part of the recipe for a change effort to succeed lies in the implementation of a

second operating model, one which relies on a volunteer army of people to work in a network-

like fashion to propel the change.

Before we can engage in the design of such an operating model we must first spend some time to

understand the current mess. Ackoff describes a mess as a "set of interacting threats and

opportunities" which if not addressed will lead to the destruction of the organization in the future

(Ackoff, 1999).

The first step in the mess formulation process is to conduct a systems analysis, which is a

presentation and diagnosis of how the current system is operating. Included in this analysis is a

more explicit definition of what the scope and content of the opportunity is and is not. For this

exercise we use an Is/Is Not Table, which in addition to defining scope and opportunity also

makes explicit some underlying assumptions around the situation. The Is/Is Not table uses

Kotters Eight Accelerators of Change as well as his Five Principles of the Dual Operating

System as the framework to explore the opportunity. The most important factors relative to the

Accelerators and the Five Principles have been identified and are the subsequent focus of the

depiction of the current state of PD's transformational change. Their importance has been

characterized as; very important, important, or less important.

Table 4. Is/Is Not Table of the Current Mess within Acme Pharma

Characteristics of Creating a Networked Based Operating Model to drive Organizational Change	IS	IS NOT	COMMENTS
Eight Accelerators of Change			
Creating a Sense of Urgency around a single big opportunity	The translation of the sense of urgency from leadership down to the working level is a constant need which should be incorporated into the network. People understand the argument laid out by leadership, but it needs to be linked with their own needs- 'lightening the workload', and less about the business need 5 years out.	This has been addressed by the leader of the organization, so it exists as a theme. He has tried to lay the case numerous times that although we've had a run of success we need to be thinking far ahead because drug development takes a long time and by the time you need strategic change its already too late	Important
Build and maintain a guiding coalition	Communicating between elements of the change initiatives and leveraging between initiatives.	Ensuring that some kind of goal or objective is required from everyone, even if it is a shared one.	Very Important
Formulate a strategic vision and develop change initiatives designed to captialize on the big opportunity	The connection between elements of the vision are weak or non-existant. Leaders of the change initiatives operate in relative isolation from one another. There is not incentive or structure for pulling them together, even just for the sake of a common message.	A vision already exists with change initiatives defined as an outcome of a strategic planning exercise. This was driven top down and the design of the end vision did not include staff. This vision will likely be iterated over time. It could change in future based on outside forces or a new leader with a dramatically different philosophy.	Less Important
Communicate the vision and the strategy to create buy-in and attract a growing volunteer arm	People claim to understand the need but not necessarily how it manifests itself in changes to processes, and ways of working. They clamor for explicit examples. Barriers to enlistment in terms of method, available time or empowerment to act	Doesn't have to do with a lack of opportunities or explicitly creating more projects associated with the change initiatives. Culture is generally one of consensus.	Very Important
Accelerate movement toward the vision and the opportunity by ensuring that the network removes barriers	A growing number of people are involved in change initiatives however they don't work together as a network. Each change initiative probably face the similar barriers.	Hierarchy has instituted some governance structures to manage execution of change initiatives, but they reside at a high level and don't facilitate interaction amongst the 'doers'. Change management methodology within each initiative.	Very Important
Celebrate visible, significant short-term wins	Specific individual initiatives claim the win, as opposed to showing how the win achieves the purposes of various initiatives. Use of rewards and recognition systems is low.	Rewards system and various communicatoin mechanisms exist. Lack of good measurement system to quantify short term wins. Cultural barriers associated with being recognized.	Very Important
Never let up. Keep learning from experience. Don't declare victory too soon	Lack of linkages between initiatives inhibits some learning. Victory is not well defined. Moving on to the next initiatives before we determine the outcome of the current initiatives	Turnover of leadership affects persistance. Pressure on leadership to declare victory.	Important
Institutionalize strategic changes in the culture	Feeling the benefits as well as measuring the benefits. Forums where people can engage in sense-making and socialization of the change	Seeing negative consequences of changes (e.g. job losses)	Important
Five Principles of the Dual Operating System			
Many change agents, not just the usual few appointees	Expanding the role and definition of change agents. Enlisting middle management.	The mere existance of change agents, which the organization already has.	Important
A want-to and a get-to, not just a have-to mind set	Positive coercsion (pay, praise). Mechanisms which show what's going on and who's involved- what the opportunities are. Getting over the need to ask permission from management. How change initiatives support the science	Putting a requirement in everyones annual goals and objectives.	Very Important
Head and heart, not just head	Appealing to the non-analytic side of essentially analytical people. A highly educated and inteligent workforce	Providing numbers to people who are too good at tearing them apart.	Very Important
Much more leadership, not just more management	Exists sporadically at both the 'leadership team' and middle management levels. Few genuine leaders of the focus areas, more are just going through the motions while 'waiting it out'	More formalized processes and procedures.	Very Important
Two systems, one organization	How to use the governance structure and management meetings which already exist to exchange information between the two systems	More meetings and governance bodies	Less Important

Diagnosing the System

One could argue that all of the Accelerators and Principles should be seen as elements of a

framework that needs to be considered together and therefore they're all of equal importance.

This may be true in principle but when applied to the actual situation within Acme it became

evident that the organization made progress in some of these areas more than others, and as such

the new design should focus on the areas which are more in need. Therefore, if an Accelerator or

Principle is deemed less important this doesn't necessarily mean the factor is less important, it

could mean that the organization has already addressed it therefore it's less deficient.

Conversely, the areas which are 'very important' could either be because the author thinks

they're very important or because they are an area which is most deficient.

Among the areas determined to be 'very important' were *Building a Guiding Coalition*, which

together with *Much more Leadership, not just more Management* reflect the notion that not all

the management team or those considered leaders are behind the effort in an active way. The

reasoning behind this is varied and includes everything from not having enough time, to a notion

that some of these Focus Areas don't align with their values as scientist. This is especially true

of the Productivity Focus Area.

Communicating the vision and the strategy to create buy in was also a 'very important' element.

This is born out of many comments from surveys and focus groups which speak to the fact that

many people don't have a tangible idea of what the content is in each Focus Area and how that

content fits together into a way of working which is different from the status quo. They clamor

for specific examples of the changes each Focus Area seeks to make. I think scientists want to

see the details of the hypothesis which constitutes the strategic vision and ask the question, "does

the content seem like it will affect change or not?".   This view of how scientists process the

vision may not be entirely complete given that one of the other Principles which came out as very important was *Head and Heart, not just Head.* Being a very intelligent work force the scientists do want to see the logic and the data, but I think they also want to see something to get excited about. Something that will help them do more exciting science more effectively. This culminates in the *Want-to and a get-to, not just a have-to mind set* where there exist quite a few obstacles in the current paradigm. Drug development is a process of identifying and reducing risk, so people are conditioned to be risk averse. This is evident in the caution with which they approach the Focus Areas. Given that the organization had a large reduction in force four years ago and management still seems focused on productivity, this seems to point to substantial risk to jobs if the current strategic vision succeeds. In addition, substantial bureaucracy exists in the organization around the drug development process and the financial process. Given the size of the organization this bureaucracy is probably not out of line with other similar organizations and combined with the risk averse nature of the culture it acts as an inhibitor to initiative and any *'want-to and get-to'* inclinations that employees may have. Another inhibitor in this area which came out strongly in surveys was having the time to pursue initiatives within the Focus Areas. This time constraint is a good thing in the sense that it comes from having a very healthy drug pipeline. Even if an employee feels empowered to get involved, has the time, and the desire, they may not know how to get involved. Currently a mechanism doesn't exist to channel and connect people with initiatives in a Focus Area. They have to know who to speak with and very often this starts with their superior, which once again is tantamount to asking permission. The current way of working within the Focus Areas and their initiatives doesn't help the formation of the network or the success of the projects within the Focus Areas. Initiatives and projects within the Focus Areas don't talk with one another on a routine basis. This leads some

of them to be misaligned with each other in terms of what they seek to achieve or their scopes. The result is that the organization sees and hears from a dizzying array of teams, each with their own catch phrase claiming it will improve something. The organization at large perceives initiatives which have overlap but are nevertheless disconnected from one another, not fitting into a whole that makes sense. Their confusion over the situation is not surprising. Therefore, *Accelerate movement toward the vision and the opportunity by ensuring the network removes barriers* is very important because no network exists in the current state, just a bunch of rather isolated initiatives in isolated Focus Areas. This leaves the Leadership Team as the only ones who can see the big picture, reconcile differences and ensure alignment, but they tend to be too far away from the details to see where each Focus Area should connect and what needs to be reconciled or aligned.

Lastly, *celebrating visible, significant short term wins* is critical simply because we have had precious little in the way of wins to celebrate, but also because the more the PD organization can do this the more if feeds the *head and heart* rationale and the *want-to mind set*. Especially important within this principle is rewarding people. In general people can't feel the effects of the transformational change, therefore it would be helpful if they could see it highlighted via rewards for those involved. People don't see their colleagues being promoted or otherwise rewarded for their work on the change initiative, so they naturally wonder what's in it for them. The landscape isn't totally bare here because some departments have instituted an award for productivity projects.

In addition to highlighting what was 'very important' it's also worth mentioning the elements which came out as 'less important'. *Formulating the strategic vision* came out as less important simply because this vision has already been formulated. It was formulated in typical top down

fashion and as such most of the organization wasn't involved in its development, so it's hardly

surprising they can't see the connections amongst its initiatives or don't fully understand that

rationale behind it. However, from the perspective of building the volunteer network the vision

is complete based on the practical notion that management isn't going to go back and re-develop

the vision in a more inclusive Idealized Design-like fashion.

Two systems, one organization was the second element of lesser importance. To me this element

speaks to formalizing the second operating system within the structures of the organization and

its existing hierarchy. The current organization will probably be averse to formalization of the

secondary operating model and even if it isn't, any formalization would probably result in

additional bureaucracy and oversight, which would most likely be detrimental to the enlistment

of volunteers.

Based on this analysis a depiction of the current state of Acme's transformational change effort

has been created (Figure 2).

Figure 2. Depiction of the Dynamics Associated with Acme's Transformation Effort
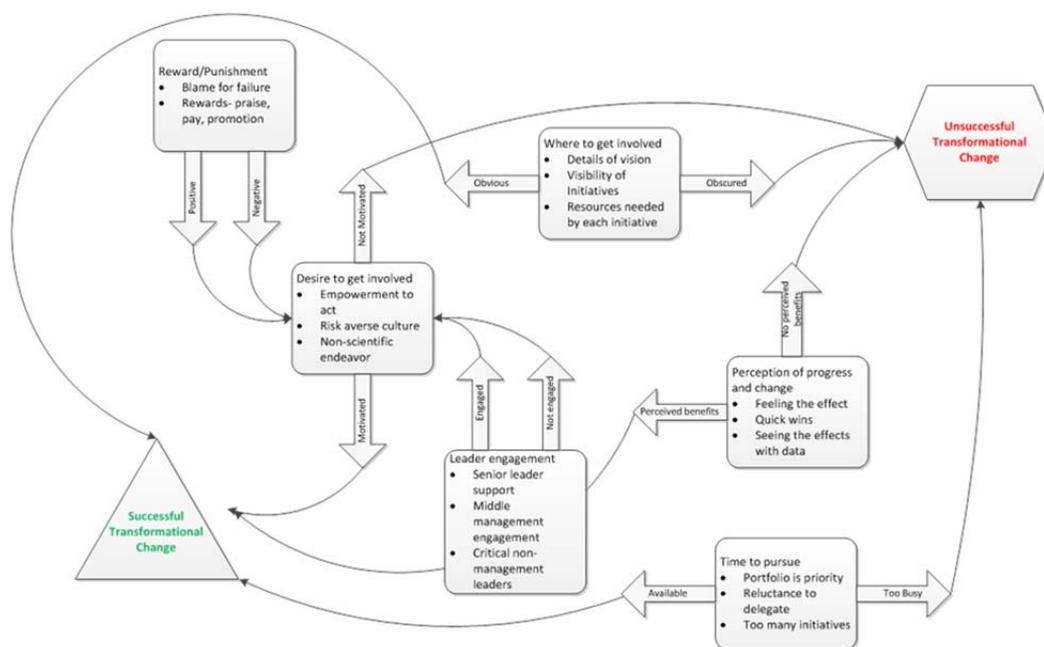
The depiction has six distinct elements: time to pursue, perception of progress, where to get involved, leader engagement, reward & punishment, and desire to get involved. Each is a determinant on whether Acme's change effort will succeed or fail. These effects are complex and interactive and don't necessarily exert themselves on individuals in equal measure. For example, someone may have the time and desire to pursue an initiative in one of the Focus Areas but has a very controlling superior which moderates their ability to engage. In fact, the current situation is one in which the desired outcome of a 'successful transformation' is unlikely, which is due to significant conflicts and obstructions (Table 5).

Table 5. Obstructions and Conflicts Associated with Acme's Transformation Effort

Reward & Punishment	Leader Engagement	Desire to get involved
• Blame is perceived to be used more than Reward in the current environment. • Very few examples of reward for non-scientific work	• Leadership team supports only because of financial targets • Middle management time squeeze • No operational performance measures	• Staff don't feel they are empowered to volunteer • Risk adverse culture given that drug development is about risk identification and reduction. • Non-scientific endeavors do not appeal

Where to get involved	Time to Pursue	Perception of Progress
• Lack of clear and detailed understanding of the pieces of the vision and how they fit together • No mechanism to broadcast opportunities for involvement	• The development portfolio is the overriding priority • Management is too busy due to spans of control, lack of delegation, and initiative overload	• Due to long cycle times in drug development changes in performance aren't seen quickly, making 'quick wins' difficult to attain. • Due to the increasing work burden of the portfolio people don't feel the benefit in terms of a 'lighter load'

These obstructions have resulted in low engagement from both leaders and staff within the organization. Most of the initiatives under the Focus Areas have been slow to get started and gain traction, never mind show results. In addition most initiatives push forward without reaching out to other initiatives to see where they can find common ground and leverage. Senior leaders are motivated by financial incentives which can involve a 'numbers game' rather than real improvement.

Under these conditions its argued that the current situation is a mess and continuing on in the current mode will result in a transformation effort which will fail to meet the expectations of senior leaders, and result in increased work pressure on staff to the point of significant burn out, resulting in loss of talent and an erosion of the ability of the organization to grow.

CHAPTER 5

The Idealized Design

The Idealized Design Session

As previously mentioned there are five different Focus Areas within the overall change effort underway in Acme's PD organization. Within each Focus Area there are several initiatives, some of these are more significant than others. Each of the Focus Areas has a sponsor on the leadership team and each initiative has an owner who is responsible for its execution. For the purpose of the Idealized Design it was impractical to get a substantial number of these people together. This stems from the sheer logistics of coordinating a face to face get together with individuals from both the US and Europe, to the lack of an impetus around the need for such a gathering. In short, for most of these individuals the question of how to work in a more networked fashion is not important enough to drop work on developing molecules. Therefore, for the purpose of the Idealized Design a group of people were assembled that represented three of the major initiatives in two of the Focus Areas, Productivity and People. The initiatives were as follows; Systems Deployment, Lean Implementation and Innovation. Systems deployment is charged with implementing software platforms which enable a seamless capture, storage, and use of data associated with the scientific process. The aim is to be able to design, execute and summarize data from an experiment by electronic means, as opposed to the paper based system which was used formerly. Lean Implementation seeks to leverage the concepts and tools inherent in the Toyota Production System and apply them in a pharmaceutical development context to reduce waste and enhance the flow of work. The Innovation initiative is in response to employee survey results which showed a low perception that Acme's PD group is an innovative organization. Therefore, this initiative's aim is to spur innovation within the organization. It has

defined innovation as everything from complex technical innovations to incremental

improvements. The owner of each of these initiatives was present for the Idealized Design

session along with selected members of their team, as well as the leadership team sponsor for the

Productivity Focus Area. The participants numbered a dozen and spanned organizational levels

from bench scientist to leadership team member. The session was conducted on October 17,

2013.

The mess formulation drawing from Figure 2 was presented and explained. Participants seemed

to accept the depiction of the mess, given that it came from sources which they were familiar

with. They had additional comments as follows;

- An affirmation that the Leadership Team is engaged in the change.
- The comment under 'Time to Pursue' regarding lack of delegation by leaders should not be construed as not wanting to delegate as opposed to not being able to delegate.
- Lean is looked as driving hard savings which is not motivating for most. What about the 'soft' savings?
- Senior leader support is vital.
- There is an inner motivation which is present in everyone and which we need to tap into.
- Engineering versus scientific mindset hinders practical thought.
- Project focus isolates people within the project.

After the group digested and discussed the current mess they were presented with a hypothesis

whose purpose was to initiate thinking around the premise of the future state design. Kotter's

principles were not introduced so that the group wasn't prejudiced in any way towards a certain

design and also to minimize the complexity of the exercise. If participants had to read and digest

Kotter's principles it may have caused confusion over exactly what we were trying to achieve.

Therefore this simplified hypothesis was introduced;

> To really imbed our transformation, meet our financial commitments, and make all of the imperatives successful, more people must be engaged. The ultimate form of engagement is voluntary rather than compulsory. Therefore is should be our goal to dramatically increase voluntary engagement of both leaders and staff.

Based on this hypothesis and goal, the following question was presented to the participants;

What do we need to do to drive this engagement?

The group then brainstormed around how to answer this question. Standard brainstorm 'rules' were observed such as striving for quantity over quality, suspending disbelief and evaluation, and leveraging off of one another's suggestions.

The output of the idealized design session generated 43 suggestions of what the design could incorporate. Since no prompt was given surrounding Kotter's Accelerators or his networked approach to change, the suggestions varied around themes which may or may not be directly linked. The suggestions were grouped according to their similarities.

The Burning Platform

Although a case for change was made by the organization's leadership, it was the feeling of the group that this case must constantly be emphasized and elaborated on. Drug Development is not a very fast moving process, and given the business' recent success it is all too tempting to fall into complacency. Therefore, the notion of continually repeating the burning platform and further customizing the platform for each function within PD was a strong theme which had multiple suggestions.

- Functions within PD should customize the more general burning platform into a message that resonates specifically inside their function but does not lose the broader message.

- The burning platform should be emphasized in town hall meetings, and training sessions associated with initiatives.

- The burning platform should be expressed via multiple communications modes including in writing, pictorially with learning maps, and video.

- More aggressive performance targets should be set given the relative ease with which the current targets are being achieved.

Behaviors

The category of Behaviors was primarily directed at management. Within the current mess the group agreed that not enough management level people were engaged with the initiatives within the Focus Areas. The thrust of the items in the behavior category were around having leadership make the time to discuss initiatives in terms of what is being done and why it's being done, and to focus on exposing problems. The exposure of problems within the organization is a management responsibility and they should be putting in place the structures and forums necessary to elicit the exposure of problems. This is based on the premise that if the organization doesn't acknowledge its problems at all levels, it can't possibly take steps to eliminate them. Suggestions in this area were;

- Create the time and space to discuss Lean, Innovation and Systems (or any initiative) in the context of the issues they face in their sub-function.

- Have a team which includes HR, identify and promote the behaviors necessary for PD to be successful. Do this within the overall Leadership Imperatives which already exist.

- Each management layer should have a goal and objective focused on using a tangible tool or concept from the initiatives.

Networking

The category of networking reflects the fact that more linkages need to be make to individuals who currently work on initiatives in the Focus Areas to those who should be or could be working on these initiatives. Ideally this would mean that we should have mechanisms for colleagues to visit or somehow see what others are doing within certain initiatives in a Focus Area, so that they

can learn directly and take that learning back to their department. Some suggestions also advocate that connections be made within the teams and owners of initiatives and Focus Areas.

- Comprise a Core Team of initiative owners with all functions represented.

- Conduct a stakeholder assessment of management personnel and other influential people to determine where they stand on the overall transformation effort and from that design an engagement strategy to leverage those who are positive and influence those who are negative.

- Equip the existing community of Change Agents[i] with a better understanding of the overall strategy and the imperatives. This will allow them to speak with more authority on the overall transformation and to act as linkage points to each Focus Area and its initiatives.

- Conduct field trips with scientists and managers to go to areas who have made greater strides in implementing various aspects of the transformation, so they can see for themselves.

Engagement Pathways

This category of design elements contains suggestions to create social links to the Focus Areas and initiative teams. Social links could entail using existing groups within the organization, training, and making problems more visible.

- Drive management engagement by having them walk around more. This is a concept within the Lean philosophy of 'going to the gemba (where the action is)'.

- Using visual management techniques such as white boards, or Smart boards to make problems more explicitly visible.

- Ask the Change Agent community to more actively be a conduit between initiatives and the general population.

- Lower the barriers to participation by soliciting the organization more directly for initiative team members when appropriate, in effect letting them volunteer. For example, an initiative to end excessive email solicited the entire pharmaceuticals organization for ambassadors. They received several hundred volunteers. These people will model the new desired behaviors targeted to end excessive email.

Rewards

Rewards were an area which wasn't a tremendous focus. In fact only two suggestions were classified in this group. These suggestions gravitated towards the standard mechanisms of awards and rewards which are in addition to, but not core to the annual performance evaluation process. This could be a missed opportunity to design a rewards system which more effectively balances emphasis on development projects with non-project work. It's hard to know if the design team didn't dwell on this because they didn't think it was important enough or if the lack of emphasis in the current mess suppressed their notion of its importance.

Sharing Mechanisms

Communication is at the heart of this element. Many of the suggestions strive to use both traditional mechanisms as well as social media to share information around ongoing initiatives within the Focus Areas. The team envisioned an environment where people see the need to communicate and share what they've done and they're very savvy around how they do that and they take the time to do it. However, a good portion of the suggestions were quite vague in terms of how this sharing was to take place. There is potential overlap with the Networking category.

- Use social media like Pin-It to share photos of improvements associated with initiatives.

- Publish a book of improvement examples.

- Produce a video series of improvements already made in various Focus Areas.

Tactical Support

The last category of tactical support is centered on the availability of specialized resources that have expertise in problem solving. The idea here is to have this expertise available for others to tap into. Problem solving tools and concepts were the main focus based on an assumption that specially trained individuals are needed to facilitate others in solving problems. All of the participants whether associated with Systems, Lean or Innovation, saw those initiatives as seeking to solve specific problems, and recognized that having access to and developing this capability is essential.

- Implement a simple mechanism to get specialized support on initiatives, such as a 1-800 number or a web link.

- Identify key influencers who can be trained as problem solving coaches.

- Develop and execute site based assessments within the organization as a mechanism to learn and identify gaps for improvement.

Ends Planning & Means Planning

A fundamental notion of the Ends Planning piece of an Idealized Design exercise is that the existing system was destroyed and a new one needs to be designed in its place. Effectively this means that although the participants need to develop the mess that is the current condition they are then asked to disregard it in developing the new Idealized Design. This premise proved hard to follow in this exercise. In fact the participants didn't need to think of the entire PD system as being destroyed; rather they should have considered that the execution model associated with

the transformation was destroyed. This doesn't even mean that the Focus Areas or their initiatives were destroyed. In the end this proved to be a difficult distinction to make and this can be seen in many of the suggestions made. They seem to leverage off of the current state and what is already in place to some degree. Maybe because of this, the group's suggestions seemed to dwell on the Means more than they did the Ends. Although Ends and Means differ with respect to their time horizon, I do think the suggestions from the group are quite tactical in nature and in that regard most of them are Means rather than Ends. I think in effect I provided the Ends by grouping the suggestions into categories, and expressing the intent or essence of the category. Verification that my expression of the Ends is valid according to the group would be to get their feedback on the categories.

Of even greater importance is whether the design eliminates some of the conflicts and obstructions elicited in the Mess Formulation, and how it stacks up against Kotter's Accelerators.

Table 6. Gap Analysis of Acme's Obstructions and Conflicts Identified during the Mess Formulation.

Obstruction/Conflict	Resolution/Gap
Reward & Punishment • Blame is perceived to be used more than Reward in the current environment. • Very few examples of reward for non-scientific work	The design does address rewards for non-scientific work beyond the standard suggestions which are only addendums to the official performance management process. Therefore a gap still might exist.
Leader Engagement • Leadership team supports only because of financial targets • Middle management time squeeze • No operational performance measures	The design advocates for more aggressive financial targets so this is still seen as a mechanism to maintain engagement. Elements within the Burning Platform, Behaviors and Engagement Pathways are all directed at Leaders. While these don't specifically address the time squeeze, some of them require the Leader to 'make the time'. Whether this can happen in actuality could be problematic, but if the pressure on performance improvement is high Leaders may not have a choice.

Desire to get involved • Staff don't feel they are empowered to volunteer • Risk adverse culture given that drug development is about risk identification and reduction. • Non-scientific endeavors do not appeal	If Leaders are engaged and we can successfully execute on Networking and Sharing Mechanisms this could result in more people having the desire to get involved. If we can then put in place some of the Engagement Pathways and Tactical Support pieces it will lower the barriers for people to act on these desires.
Where to get involved • Lack of clear and detailed understanding of the pieces of the vision and how they fit together • No mechanism to broadcast opportunities for involvement	Engagement Pathways would offer clear mechanisms which can be used to direct people on where to get involved. In addition, Sharing Mechanisms would make efforts transparent and equipping our Change Agents with the right information and perspective could enable them to be additional conduits for involvement.
Time to Pursue • The development portfolio is the overriding priority • Management is too busy due to spans of control, lack of delegation, and initiative overload	This was not addressed adequately or directly and as such it will still remain a significant barrier. Even well-meaning people who are currently participating or want to participate don't because of lack of time. I think if Leaders engage and make the time the rest of the organization will follow suit.
Perception of Progress • Due to long cycle times in drug development changes in performance aren't seen quickly, making 'quick wins' difficult to attain. • Due to the increasing work burden of the portfolio people don't feel the benefit in terms of a 'lighter load'	Via the Sharing Mechanisms and Networking elements of the design people can see and hear from their colleagues about the progress which has been made. Creatively structuring projects to deliver wins in progressive fashion should provide for a steady stream. Tactical problem solving support should enable this steady stream as well. People may or may not 'feel' the lighter load but hopefully they at least feel the current heavy load is less stressful to handle.

Summary

The participants in the Idealized Design exercise were all very willing and engaged in the

process. It was successful in bringing together a microcosm of Focus Areas and initiatives to

discuss how to better work together in a networked fashion and drive more engagement. The

initiatives that came together did so because they are already linked together via their goals, sub-

projects, and social relationships. I was also fortunate that there was a diversity of functions,

roles and organizational levels within the group.

Overall I am pleased with the content in the design. When I look at it against the obstructions

identified in the mess formulation I think the gap analysis shows that the team hit all the

obstructions, most of which I feel were adequately addressed. Only the areas of Rewards and Time weren't adequately addressed. While these areas are significant I do think that they can be addressed when and if I try to scale the design exercise with the entire organization.

CHAPTER 6

Conclusion

Next Steps

I think there can be several possible pathways for next steps to take. On the one hand I can begin

to work with the current design, to iterate and refine it to be more robust and address its

underlying weaknesses. I should re-engage the design team to look at the design as a coherent

entity as opposed to a loose set of suggestions. They need to view it as a whole and ask

themselves whether it makes sense or not. This may be the time to introduce them to Kotter's

Accelerators, as it might provide them with a useful context with which to make this evaluation.

Doing so might also provide a perspective to address weaknesses or even add elements which

they did not think of initially.

Whatever the outcome of the next iteration with the team, an additional next step would be to

formulate the resource plan to execute the design. Looking at the design as it exists now, much

more work would need to be done before we could get to an adequate resource plan. The team

would need to make some priorities around what elements are most important to do first and

which items within those elements should be undertaken. Indeed some suggestions are vague so

more concrete deliverables would need to be developed, which would entail further discussion

on the intent of some of the items.

An additional step to take with the design could be to try to engage a broader swath of the

organization. The goal in doing so would be to further iterate the design; adding and subtracting

elements and items, and in the process building support for it. This kind of participation

engenders ownership and in fact it's the only way it will ever become a reality. There are several

avenues for this engagement. One is to use the Change Agent community and the other is to put

the design before the annual extended leadership team meeting. I think the extended leadership team meeting is especially important. To me this is the target audience of people who will have the greatest influence on the organization. If they can be engaged in the design process, then the probability will increase that they will also participate in the execution. In this way the design process itself can also be an item within the design because it's a network building activity in its own right. Careful consideration would need to be taken as to whether we present this audience with the design-in-progress, or simply repeat the process from the beginning. The latter would potentially generate more ownership and allow for new and unexpected content to emerge.

Reflections on the Process

Upon reflection I see that the Interactive Planning process is itself subject to some of the same barriers and obstructions which were identified in the mess. The one that comes to mind most is time. I would have preferred to spend more time with the team in the mess formulation, discussion, and design generation process. The team's active participation in the mess formulation might have yielded a different outcome in the design, and taking more time for the design would have allowed the team to separate the Means from the Ends and to ensure a coherent fit of the elements. In taking on some of this synthesis myself I robbed the team of doing it. However, in my own defense, I think I needed to do it, as this is the manner by which I learn best. The result being that I feel confident that I could lead a larger Interactive Planning process in the future.

Using Kotter's Accelerators as a framework was very beneficial especially in the mess formulation process. One could argue that the use of another of the well-known and current change models would have also suited.

The design outcome was a bounded design in the sense that the containing systems of the PD organization and the Focus Areas within that were assumed to remain intact. These systems bound the system we were actually designing which was how to more effectively execute the organization's transformation. At the outset of the process I didn't full conceptualize this. In the future I can see the benefit of more explicitly creating this picture. The Is/Is Not analysis could've been of benefit in this regard if I had thought of it. I don't believe it made a material difference in the outcome because I distilled the design question down to something very simple and which in effect allowed the participants to focus only on the system that I wanted them to. An unintentional but beneficial outcome!

Reflections on the Design Content

This bounded design must fulfill three criteria: (1) it must be technologically feasible, (2) it must be capable of surviving in the current environment, and (3) it must be capable of being continuously improved.   The design is certainly technologically feasible and also capable of being continuously improved. In terms of its survival in the current environment there doesn't seem to be any element which is incompatible with the current culture or existing norms within Acme, so I do think it can survive if given the appropriate leadership focus.

The use of Kotter's Accelerators was beneficial as a theoretical framework for assessing the current mess and distilling a problem statement for the design team to work from, but how does the design actually stack up against them? To assess this I think it's best to look at Kotter's principles for his secondary operating system, rather than the eight Accelerators. It's the underlying principles which, if adhered to, will make a networked change approach a reality.

Table 7. Design Element Comparison against Kotter's Operating System Principles

Principle	Comparison to Design
Many change agents, not just the usual few appointees	The design implicitly seeks to engage or influence or communicate to everyone. It only relies on the 'few' as people to model the right behavior and not as leaders of specific aspects of the transformation. Having the Tactical Support piece enables these change agents with real support that they need.
A want-to and a get-to (not just a have-to) mind-set	With its emphasis on Networking and Sharing the design seeks to generate an enthusiasm in the organization so that people do 'want to'.
Head and heart, not just head	The Burning Platform element of the design will undoubtedly speak to the head but depending on how it's constructed can also speak to the heart. Heart elements of the burning platform could include getting medicines to market quicker for the patient as well as making our own lives better at Acme.
Much more leadership, not just more management	Many of the design elements are focused on leadership, while the team did steer clear of dreaming up new management mechanisms like additional governance meetings. The Burning Platform, Behaviors, Networking, Engagement Pathways, Sharing Mechanisms and Rewards all had suggestions targeted towards leadership action and which steered away from command and control mechanisms associated with 'more management'.
Two systems, one organization	When and if all the elements of the idealized design are put into place does it constitute a secondary operating system? Kotter doesn't say what his definition of a 'system' is (one doubts that it's the same as Ackoff's). However, I think the answer would be 'yes' if those elements were ingrained within the organization, proved sustainable, and were iterated and improved over time. If they were just short term measures used to achieve the transformation results and once achieved they went away, then one may say that they don't constitute a system.

If this design is implemented how will we know it succeeds? What results will we see? I think objectively we'll see the organization exceed it financial savings targets by a wide margin and see measureable improvement in R&D productivity. These business outcomes garner the headlines; however it's the qualitative effects which are arguably the most important. In that regard, hopefully we'll see more people willingly engage in the non-scientific efforts to make the organization better. Soliciting for volunteers and volunteering will become the norm. Leaders

within the organization will have the time to spend helping the organization be better instead of spending all of their time fighting the day-to-day fires. Improvement initiatives will arise and move forward without direction from above, and management will not feel the need to try to control this. Measuring the number of people engaged in Focus Area initiatives is a way to gage whether the design elements of Networking, Engagement Pathways and Sharing Mechanisms are having their effect. The elements within the design do need to be purposefully driven by leadership. Here we come back around to Behaviors, especially leadership behaviors as being a key. It goes back to the topics discussed in the literature review. That regardless of the culture, leadership has coercive 'power over' people and via the enhancement motive people desire to be in good favor with their leaders. Leadership not only needs to talk about the burning platform but they need to back up this talk with actions and involvement in the Focus Area initiatives via the described design elements. To me this is the lead domino which must fall, and when it does we can expect to see other leaders engage; to balance their time more effectively between the day-to-day and the transformation initiative, and in turn the base of the organization will likely follow.

NOTES

---

[i] Change Agents are an existing group of volunteers who have been specifically trained to perceive the undercurrents of the organization and be a voice to leadership to help guide and facilitate change.

REFERENCES

Ackoff, R. L. (1994). *The Democratic Corporation.* New York: Oxford University Press.

Ackoff, R. L. (1999). *Re-Creating the Corporation: A Design of Corporations for the 21st Century.* New York: Oxford University Press.

Ackoff, R. L., Magidson, J., & Addison, H. J. (2006). *Idealized Design: Creating an Organization's Future.* Upper Saddle River, NJ: Prentice Hall.

Armstrong, C., & Guimaraes, T. (1998). Empirically testing the impact of change management effectiveness on company performance. *European Journal of Innovation Management*, 74-84.

Fischhoff, B., Slovic, P., & Lichtenstein, S. (1982). Response Mode, Framing, and Information-Processing Effects in Risk Assessment. In R. Hogarth, *New Directions for Methodology of Social and Behavioral Science: Question Framing and Response Consistency* (pp. 21-36). San Francisco: Jossey-Bass.

Gebauer, J., & Lowman, D. (2008). *Closing the engagement gap: How great companies unlock employee potential for superior results.* New York: Penguin.

Grant, A. M. (2012). Leading with Meaning: Beneficiary Contact, Prosocial Impact, and the Performance Effects of Transformational Leadership. *Academy of Management*, 458-476.

Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Instrinsic and Prosocial Motiviations, Perspective Taking and Creativity. *Academy of Management Journal*, 73-96.

Hailey, B. J., & Hailey, H. (2004). *Exploring Strategic Change.* London: Prentice Hall.

Higgs, M., & Rowland, D. (2005). All Changes Great and Small: Exploring Approaches to Change and its Leadership. *Journal of Change Management*, 121-151.

Jackson, M. C. (2003). *Systems Thinking: Creative Holism for Managers.* Chichester, UK: John Wiley & Sons, Ltd.

Kahneman, D. (2011). *Thinking, Fast and Slow.* New York: Farrar, Straus and Giroux.

Kotter, J. P. (1996). *Leading Change.* Boston, MA: Harvard Business School Press.

Kotter, J. P. (2012). Accelerate! *Harvard Business Review*, 44-58.

Luecke, R. (2003). *Managing Change and Transition.* Boston, MA: Harvard Business School Press.

Parker, S. K., & Axtell, C. M. (2001). Seeing another viewpoint: Antecedents and outcomes of employee perspective taking. *Academy of Management Journal*, 1085-1100.

Pfeffer, J., & Fong, C. T. (2005). Building Organization Theory from the First Principles: The Self Enhancement Motive and Understanding Power and Influence. *Organizational Science*, 372-388.

Scannell, J. W., Blanckley, A., Boldon, H., & Warrington, B. (2012, March). Diagnosing the decline in pharmaceutical R&D efficiency. *Nature Reviews*, pp. 191-200.

Schein, E. H. (2004). *Organizational Culture and Leadership.* San Francisco: Jossey-Bass.

Todnem, R. (2005). Organisational Change Management: A Critical Review. *Journal of Change Management*, 369-380.

von Bertalanffy, L. (1968). *General Systems Theory.* Harmondsworth, UK: Penguin.