Institute For Enterprise Excellence

Bringing Purpose To Life

Evolving World View: Implications for All Industries, Including Healthcare

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Executive Summary:
Why is it so difficult for managers to understand what must be done and to take the necessary action to move beyond the “comfort of the comfort zone” as described in our first white paper “Foundations For Transformation?” In this second white paper we discuss one of the primary factors. Many executives and managers are just now realizing their world is undergoing a change in worldview – a paradigm shift. Success in the new world view requires unlearning much of what we have been taught, and learning and using entirely different principles of management. The ideas in this paper pertain to any industry, however we place emphasis on the healthcare industry which seems to be at a pivotal point, with an opportunity to choose between yet another program, or a different management philosophy.

Mental Models and World View:
In their book Systems Thinking Made Simple, Derek and Laura Cabrera explain that humans do not react directly with reality, we view our world through our mental models. When mental models become common and collectively owned by many people, they become a root metaphor or common world view.

S-Curves
Healthcare is one of the latest industries to experience a change in worldview from “machine management” to “system management.” To understand the magnitude of this change, we have learned from the work of Barbara Lawton, Sally Goerner, George Land, and Adrian Bejian, all of whom have described the phenomenon of the “S-Curve,” a pattern that is recognized by economists, physicists, scientists and marketers.

Most everyone has probably experienced an S-Curve. Here’s a simple example. The changes in technology for the way that sound is recorded and available for listening over the last 140 years is shown in a series of S-curves in Figure 1, starting with the gramophone and evolving to the: phonograph, turntable, reel-to-reel tape, cassette tape, 8-track tape, compact disk, mp3 player, smart phone, and now cloud storage.

At a very basic level, each of those S-Curves looks something like Figure 2.
Step 1 – A new idea surfaces. It is unproven and the adoption rate is low.
Step 2 – The idea gains more acceptance and use.
Step 3 – Problems surface that cannot be solved by the prevailing idea.
Step 4 – A new idea surfaces.

There is actually much more going on, which is illustrated in Figure 3 below. The S-Curve has several phases, informed by laws of physics and thermodynamics:
- a - Beginning with the formation phase at the bottom, lower left-hand corner, where diversity of ideas (worldviews) seeds a new pattern of organization by tapping an energy build-up.

3 After the Clockwork Universe, Sally Goerner, 1999; World Hypothesis, Stephen C. Pepper, 1972.
6 “Creating a Sustainable Competitive Edge,” Journal of Innovative Management, Spring 2000, GOAL/QPC.
7 Design In Nature, Adrian Bejian, 2013

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b - The first of two “fragility zones” is next – areas where growth or continued growth of the new idea (organization) is at risk – is the transition from “formation” to “acceleration” phase.
c - In the acceleration phase the idea (organization) grows by accelerating energy flow.
d - In fragility zone #2 the worldview and organization begins to lose energy. It is beginning to reach the limits of its ability to facilitate energy flow.
e - The limitation phase begins when the opportunities for growth diminish because the worldview (organization) no longer serves the energy needs of the larger environment. What happens in the limitation phase is essentially sclerosis or “stuckness.” The same flow structure that increased productivity and enabled growth early on later inhibits the change and adaptation needed at the top of the s-curve. The cycle continues as diversity of ideas starts a new formation phase.

S-Curves and Human Social Systems
Another example of the S-curve model can be applied to human social systems, beginning with how humans originally organized themselves to ensure their survival starting approximately 300,000 years ago.

Hunter-gatherer
The hunter-gatherer model was useful when the game and plants were plentiful and the community was small and mobile. The earliest human tribes slowly improved their standard of living by learning how to create better spears, taking on different roles in the hunt to increase their success and creating a division of labor in society that enabled advancement through specialization. Their rules for success were captured and passed on to future generations through their societal structure.

Each mode of living has its limits relative to the size of the population and quality of life it can sustain. As the population grows, the spoils of the hunt must be shared among more and more people, putting pressure on the system and its leaders to produce more. “Topping out” occurs when the return on efforts decreases and the population continues to increase. This results in tremendous tension and often societal rifts as different subgroups struggle to maintain their share in a time of diminishing returns. The usual human response, however, is to work harder doing what we already know.

The idea behind the hunter-gatherer model worked, but only for small groups of people who were successful at hunting for their food (whether through the use of weapons to kill game, or to know which kinds of plants were edible and which were not). The idea failed when the game animals moved too far, or when there were harsh conditions that affected the food sources. The idea could not support larger groups of people, and it was not possible to establish stable living conditions in one location. Working harder at the hunter-gatherer idea could not solve the problem. A totally new idea was needed. Societies assume that their metaphor is equivalent to the facts, but this is not true. Metaphors are merely a way to organize facts. History is a game of trying to find metaphors that fit the facts while also making society work better. The new idea is often actually proposed while the current idea appears to be working well. It is not immediately seen as useful and those who propose the new idea are often met with resistance.

Agricultural
About 10,000 years ago our mode of life shifted from hunter-gatherer to one based on agriculture. While the idea of growing food had probably been around for hundreds or thousands of years it was in this period of time that an entire end-to-end system of planting, nurturing, harvesting and storing food had evolved to the point where it could be a foundation for human life.

Just as with the hunter-gatherer model, what followed were times of tremendous bounty and growth as the new patterns were established, implemented and spread to substantially increase productivity. However, new problems
surfaced that could not be solved by working harder at the agricultural model. While horse-power worked, it could not support larger populations and their needs. Transporting goods across large distances in this manner was slow and unreliable.

A new idea sprang up approximately 250 years ago primarily from the development and discovery of science. For instance, the study of electricity and of magnetism, and the synthesis of these two bodies of knowledge produced “electro-magnetism” which led to the creation of the motor, which became one of the ideas producing what became known as the “industrial age.”

**Industrial**

Humans could make more progress and solve problems through the invention and use of machines. The industrial age is part of the “machine view” and “clockwork view” which has dominated western civilization for decades and is highly institutionalized today.

This model gained wide acceptance and is still the predominant mental model in our world today. For instance, our education system is based on the factory model of filling the minds of children with information (not necessarily knowledge) through a sequence and progression of grades based on age. The machine view dominates our work, where we view our organizations (and the people who work in them) as a collection of interchangeable parts. The annual ritual of performance evaluation of people comes from the machine view. When things go wrong, we break the problem apart (through analysis), study the parts, search for the root cause, look for the broken part (or person) and repair or replace the part (or the person). These kinds of ideas are now insidiously woven into every nook and cranny of our world. For instance, people assume that economies can be planned, controlled and predicted.

But new problems are surfacing that cannot be solved by continued use (or working harder at) the industrial model. For example, we are experiencing unsustainable population growth, climate change produced by human (and industry) activity, exhaustion of fossil fuels and scarcity of potable water are just a few of the problems caused by the broad use of the industrial model. The machine view of the world is based on the belief that technique X will controllably produce result Y. People are beginning to see the limitations of mere techniques; precise interventions or formulas that they think will produce predictable, controlled results. Our culture is riddled with assumptions based on separation and non-dependence. The current prevailing view is based on the image of single isolated causes. We have built our society around machine world beliefs, but we are finding that they are simplistic and inadequate. Analytic approaches (ones that break down, control and isolate) beg us to believe in simple causes no matter how complex the actual process might be. The traditional belief that people can predict everything if they just have the right equation is simply wrong.

**Next S-Curve**

A new big change is already underway, and a new world mental model has been evolving. There are skirmishes everywhere as the economic foundation and our way of life shifts from blue-collar, industrial work to white-collar “knowledge-based” work. Science is shifting from a view based on independence (studying separate things) to one based on interdependence (studying how things are woven together). We are witnessing the end of the analytic era and the beginning of a synthetic, integrative, interwoven era in science. Classical scientific images based on single causality are crumbling. In their place a new science based on web dynamics (interdependence) and its organizing tendencies is emerging.

Some have called this the “integral”, “web” or “systemic” model. We are learning that we are in a web world, and webs don’t work like machines. We are learning that things are intertwined, and that intertwining counts. One thing affects another, which affects a third, which turns around and affects the first. You can’t understand much until you realize that everything is a web (or a system).

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We are living in an age which has been undergoing a paradigm shift in world view. What we were taught, how we were taught and how we were treated (in school or at work) was based on the industrial view of the world. We use the word “was”, but we should say “is.” There is some evidence of a change to a new way of thinking, but it is not (yet) a common view.\(^9\)

**Healthcare’s S-Curves**

Healthcare has gone through several S-Curves. Not so long ago, the worldview for healthcare provision could be described as a “craft model.” It was primarily driven by the knowledge and skills of the individual practitioner who provided care to one patient at a time. This model worked on a small, local scale, but new problems surfaced that could not be solved by working harder in the craft-based model. Care of larger populations and more complex conditions required creation of hospitals where patients could be “housed” overnight. An entire industry has evolved to address these needs. A new mental model was needed.

The next S-Curve was driven by the application of modern management to the medical model. This worldview has been described using many adjectives: industrial, clockwork, mechanistic, “command and control”, “Sloan\(^{10}\) management”, to name a few. This is the worldview that is still dominant in most of our institutions include education, government and industry. In healthcare, the model has created two primary support structures (some would call them “silos”). The clinical and administrative support structures have tried to accommodate the autonomy of the clinician and at the same time manage the administrative support processes like any other business. This model is exhausting its usefulness and new alternatives are surfacing.

A new worldview began to surface over the last several decades. We believe it can be traced back to the early 1900s when physicists began to understand the limits of the Newtonian model and discovered laws and principles of what has been called the “web” or “integral” worldview. Referring to Figure 3, we see healthcare moving from “zone d” (fragility zone 2) or well into zone e (limitation phase).

**Lean and the S-Curve – The “Emerging New Idea”?**

In our first White Paper “Foundations For Transformation: Linking Purpose, People and Process,”\(^1\) we described how lean management can be viewed as yet the latest in a series of “flavors of the month,” or executives can understand the profound shift in thinking required and it could be seen as the new emerging idea to manage and thrive in the new age.

In this section, we will review a timeline starting in 1925 to the present (2016, the year this white paper was published) and describe some of the historical perspective to put the current interest in lean management into context. We will focus particularly on the recent interest and activity in the healthcare industry. Figure 4 illustrates the timeline. We want to place this alongside of a model that most people might find familiar – a football field. We’ll place 2016 at the right-hand goal line.

We’ll place the year 2002 at about the 15-yard line. This is roughly the year that some healthcare organizations like ThedaCare\(^{11}\), Virginia Mason\(^{12}\), Seattle Children’s Hospital\(^{13}\), Denver Health\(^{14}\) and a few others mark as

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10. Alfred P. Sloan, American business executive in the automotive industry. He was a long-time President, Chairman, and CEO of the General Motors Corporation.
11. [www.thedacare.org](http://www.thedacare.org)
12. [www.virginiamason.org](http://www.virginiamason.org)
13. [www.seattlechildrens.org](http://www.seattlechildrens.org)
14. [www.denverhealth.org](http://www.denverhealth.org)
the start of their serious work to understand and apply what is now being called “lean.” These organizations learned from other industries and consultants that introduced them to model of management based on the Toyota Production System.

In 2008, the ThedaCare Center For Healthcare Value\textsuperscript{15} was founded as a 501c3 educational organization to help and encourage more healthcare organizations to learn and apply lean thinking and methods. We’ll place that around the 7-yard line, to illustrate the “newness” of this new style of management in healthcare.

Let’s now go to the opposite end of this time line (to the other goal line) and think about what was happening in the 1920s. It was around 1925 that Dr. Walter Shewhart\textsuperscript{16} designed a method to distinguish the two types of variation that is seen in any process or system – common (or chance) causes of variation, and special (or assignable) causes of variation. This was important work that came from the Bell Laboratories to help management to improve the production of telephones. He discovered that common causes of variation come from the production system and its many components and their interactions, and that improvement in future output will only come from study and improvement of the system, not from reaction to the variation seen by single points or what were judged to be trends. Special cause variation is a cause that comes from outside of the system and it is worth investigating. The cause is assignable.

Up until that time, management had been acting on every occurrence of variation (common cause) and was making matters worse. This action is what Dr. W. Edwards Deming would subsequently call “tampering.”\textsuperscript{17}

Deming (who obtained his PhD in physics) was a student of Shewhart’s and he learned about and then built upon the knowledge of variation and appropriate management action. Deming and others applied these methods to various industries including transportation, agriculture and the U.S. Census Bureau. This knowledge was instrumental in the World War II production effort, which allowed the United States and allied countries to produce and distribute weapons and materials with high reliability, and in an efficient manner.

It was in the late 1940s and 1950s that Deming was invited to Japan (in the beginning to help with Japan’s census). His reputation for applying statistical methods for improvement to manufacturing and business was well known and the Japanese Union of Scientists and Engineers sponsored many lectures to management and to engineers over many visits. Japanese management and engineers took his lessons seriously and over a period of less than 5 years began to turn their reputation for quality around.

Dr. Deming brought new knowledge to Japanese management. He taught them three new ways to think (mental models):
\begin{itemize}
  \item 1. the Quality Chain Reaction as illustrated in Figure 5,\textsuperscript{18}
  \item 2. to see their companies (and their country) as a system, and;
  \item 3. to correctly respond to the variation in the output of their goods and services.\textsuperscript{19}
\end{itemize}

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\textsuperscript{15} In 2016, the organization’s name was changed to “Catalysis.” \url{www.createvalue.org}
\textsuperscript{16} Walter Shewhart was an American physicist, engineer and statistician, sometimes known as the father of statistical quality control and also related to the Shewhart Cycle, which is the foundation for the PDSA cycle.
\textsuperscript{17} W. Edwards Deming, \textit{Out of the Crisis}, 1986, p. 327.
Figure 6 shows where these events fit on the timeline – approximately near the 25-yard line, left-hand side. Over a period of many, many years through trial and error and application of the PDSA cycle, companies like Toyota developed management systems based on these and other principles taught by Dr. Deming and others, and this improvement continues to this day.

Japan is an island country with limited natural resources. Japanese companies import raw material, add value through management and production processes, and sell their products with a reputation of high quality and reliability. They had to make the best use out of all their resources. They had no choice. Their very survival depended on it.

What was happening in the United States during this time? Figure 7 represents the actions by the US and Western world on the timeline. After World War II the problem for US companies was not quality, but rather “quantity.” Pent-up demand starting with the great depression followed by austerity measures during World War II caused an unprecedented increase in demand for goods. US companies resorted to the old industrial (machine) view of the world to meet this demand, not the new knowledge that Japan was applying. Many proven methods (like training within industry) that helped to win the war effort were cast aside and forgotten. The problem was quantity, not quality.

The industrial view model is based on “command and control,” centralized decision-making, dominance mind-set, a win-lose (or zero sum) view. The view is to treat the world as a machine and look to analysis of the parts (reductionist thinking). This view extends to treating people as interchangeable parts.

We were in an expanding market and almost anyone who started a business was guaranteed to be successful. Not because of superior or knowledgeable management, but due to the expanding market. In other words, dumb luck. The focus was quantity not quality. Approaches to management such as “management by objective” were developed and taught, and are still taught to this day.

A predominant mindset of management is “management by results,” as is ranking and rating of people, teams, divisions and companies, tied to reward and punishment based on the belief in use of extrinsic motivation as an approach to motivate people to do better. Ranking and rating organizations, teams and people makes perfect sense. A focus on the individual when things went wrong (or right) and use of the annual performance appraisal as a method for improvement. Deming called this prevailing style of management seen in the West the “mythology of management.” Other terms are “Sloan management”, “modern management” and “scientific management.”

By the 1970s it became apparent that US automakers could not compete on the global market. The same as true for the electronics industry. On June 24, 1980, a program “If Japan Can, Why Can’t We?” was broadcast on NBC as part of the television show “NBC White Paper.” This program is credited with the beginning of the quality revolution and introduction of Deming’s theories and methods to American managers. At the end of the program Bill Conway (manager at Nashua Paper Company) interviewed Dr. Deming and made this statement: “Many of the programs using your methods have died in American management because they didn’t get top management support. Now, why top management does not believe that this is the way that the Japanese have improved their industry over the last 30 years
I don’t know.” Here is Deming’s response: “I think that people here expect miracles. American management thinks they can just copy from Japan – but they don’t know what to copy!”

After that program Dr. Deming’s time was in high demand. Desperate CEOs wanted his help immediately. In the response to the demand, he described principles of management that U.S. and Western countries needed to understand and embrace. These became the “14 Principles For Western Management” or simply, “the 14 Points.” He also described 7 deadly diseases and multiple obstacles. These are listed below.

Deming’s 14 Principles For Western Management:
1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.
2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Break down barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.
11a. Eliminate work standards (quotas) on the factory floor. Substitute leadership.
12a. Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.
12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, inter alia, abolition of the annual or merit rating and of management by objective.
13. Institute a vigorous program of education and self-improvement.
14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody’s job.

Deming’s 7 Deadly Disease That Afflict Western Management:
1. Lack of constancy of purpose to plan product and service that will have a market and keep the company in business, and provide jobs.

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20 www.deming.org/content/if-japan-canwhy-cant-we

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2. Emphasis on short-term profits: short-term thinking (just the opposite from constancy of purpose to stay in business), fed by fear of unfriendly takeover, and by push from bankers and owners for dividends.
3. Evaluation of performance, merit rating, or annual review.
4. Mobility of management; job hopping.
5. Management by use only of visible figures, with little or no consideration of figures that are unknown or unknowable.
Diseases peculiar to industry in the United States:
6. Excessive medical costs.
7. Excessive costs of liability, swelled by lawyers that work on contingency fees.
Obstacles for Western Management:
“There are, besides the deadly diseases, a whole parade of obstacles. Some obstacles are in fact candidates for front rank in effectiveness, along with the deadly diseases, though most of them are easier to cure than the deadly diseases.”
1. Hope for instant pudding.
2. The supposition that solving problems, automation, gadgets, and new machinery will transform industry.
3. Search for examples.
4. “Our problems are different.”
5. Obsolescence in schools.
6. Poor teaching of statistical methods in industry.
7. Use of Military Standard 105D and other tables for acceptance.
8. “Our quality control department takes care of all our problems of quality.”
9. “Our troubles lie entirely in the work force.”
10. False starts.
11. “We installed quality control.”
12. The unmanned computer.
13. The supposition that it is only necessary to meet specifications.
14. The fallacy of zero defects.
15. Inadequate testing of prototypes.
16. “Anyone that comes to try to help us must understand all about our business.”

In the late 1980s, a group of researchers from Massachusetts Institute of Technology (MIT) were studying the phenomenon they were witnessing regarding the quality of cars from companies like Toyota compared to US car manufacturers.24

This work prompted a study of the Toyota Production System and it was in 1987 that the term “lean” was first used to describe the reasons for the substantial differences.25 We’ll place this at about the 25-yard line of the time line, see Figure 9.

In 1993 Dr. Deming published *The New Economics* in which he described the body of knowledge upon which his 14 Principles for Western Management were based. See Figure 9. It’s important to note that the MIT study, and subsequent labeling of “lean” is not related to Deming’s System of Profound Knowledge. These activities happen to be

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place on the timeline near each other.

Deming’s System of Profound Knowledge has four inter-related parts:
* Appreciation for a system
* Knowledge about variation
* Theory of knowledge
* Psychology

Here are some excerpts from Chapter 4 of The New Economics that are pertinent to the theme of this paper:
“The prevailing style of management must undergo transformation. A system cannot understand itself. The transformation requires a view from outside. The aim of this chapter is to provide an outside view - a lens - that I call a system of profound knowledge. It provides a map of theory by which to understand the organizations that we work in.
“The first step is transformation of the individual. This transformation is discontinuous. It comes from understanding of the system of profound knowledge. The individual, transformed, will perceive new meaning to his life, to events, to numbers, to interactions between people.
“Once the individual understands the system of profound knowledge, he will apply its principles in every kind of relationship with other people. He will have a basis for judgment of his own decisions and for transformation of the organizations that he belongs to. The individual, once transformed, will:
- Set an example
- Be a good listener, but will not compromise,
- Continually teach other people,
- Help people to pull away from their current practice and beliefs and move into the new philosophy without a feeling of guilt about the past.”

Knowledge for the New S-Curve
It is our contention that the knowledge that we need to navigate our way in this new paradigm of management is illustrated in Figure 10. In addition to the 4 interdependent bodies of knowledge described by Dr. Deming, we believe that the study and application of behaviorism and neuroscience will be particularly important. A three-dimensional view of Dr. Deming’s System of Profound Knowledge can be found by going to this link: https://youtu.be/8Q2Z7dt_gQg

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26 We provide an overview of the “theory of knowledge” in our 3rd White Paper: http://bit.ly/practicalwisdom5
27 W. Edwards Deming, The New Economics, Chapter 4, p. 92-93.
US healthcare has been, but is no longer, experiencing an expanding market. Our country can no longer afford wide variation in quality and the steady, year over year increases in cost. The demand for a reversal in both high cost and poor quality is well underway. Many healthcare organizations are attempting to learn the principles of the management systems that were first created in the 1950s. Are they learning the knowledge behind the methods and tools, or are they trying to copy the tools and apply them within the prevailing style of management?

Figure 11 illustrates one way to understand the current state. Using the iceberg as a metaphor for understanding an organization, we’ll begin with the things on the surface. If we visited any organization, there are things we would notice without asking any questions. We might see people using tools (white boards, huddles, forms, etc. We would see many artifacts (mission, vision, value statements; posters, signs, etc.) We would notice behavior – what people are doing, the kinds of questions they ask, the way they talk to and communicate with each other. We might see the results and measures that seem to be important.

If we asked a few questions, we might get to the level “just below the surface.” We might notice people doing things in repeated steps. We might see processes. People may or may not be using the same process for a different task. We would probably notice variation.

If we ask yet more questions, we might begin to see these processes (and the tools, the measures, the artifacts) as parts of systems or structures. These could be both formal (designed) or informal systems and structures.

If we asked even more questions (and the right questions) we might begin to understand the thinking and beliefs of the people who are in these systems – the system designers (both formal and informal). We would better understand the principles that guide the creation of the systems.

Finally, if we went very deep in our questions, we might begin to see the knowledge behind the principles. Most likely, the knowledge behind the principles will be knowledge from the industrial view of the world. However, in some organizations, this knowledge is being replaced by the knowledge needed for the next S-Curve.

**Some Important Questions**

1. Are executives and managers merely copying the surface tools, or are they understanding the knowledge and principles beneath the surface. Borrowing from Dr. Deming’s response in the 1980 NBC White Paper Program, we might ask, “Do people expect miracles? When they go see others, are they copying? Do they know what to copy?

2. Will healthcare management see “beneath the surface” and go beyond the mere use of tools? Will they understand the importance of systems and how these systems must be designed and redesigned based on principles from a new world view? And will they understand the knowledge upon which the principles are derived?

2. Is top management is ready to let go of the prevailing style of management and learn an entirely different style of management based on principles of the new world view?
Our White Paper Series:
Our first white paper “Foundations For Transformation: Linking Purpose, People and Process”\(^1\) describes the common patterns that we have observed as executives and managers have attempted to create a culture of continuous improvement in their organization. Many find themselves trapped in a cycle of “program of the month” approaches that never seem to produce the sustainable transformation of management that is necessary. However, there are some who desire to break away from this pattern, and wish to switch the direction of their efforts by understanding the power of purpose, as well as learning and practicing new principles of management.

Our second white paper “Evolving World View: Implications for All Industries, Including Healthcare”\(^28\) describes the sources of knowledge that will be needed to manage effectively in the twenty-first century. We described how the world view is changing from the “machine age” mindset that has driven the traditional “plan, command and control” approach, to a “systems view.” We explain the evolution of thinking that is the foundation for the principles of enterprise excellence.

Our third white paper “Practical Wisdom for Addressing Problems”\(^8\) describes the practical benefits of understanding the difference between convergent and divergent problems, including what we can reasonably expect from ourselves and from others when attempting to address the important problems of management. The tendency for most executives and managers is to look to recipes and formulas to tell us what to do – a prescription for how to deploy a lean management system. There is no recipe, formula or prescriptions. But there is knowledge that can guide our actions.

Our fourth white paper “One Approach to Deploying a Purpose and Principle-Driven Transformation”\(^29\) shares our current thinking about “deploying a cultural transformation” based on the knowledge and contributions of many thought leaders, as well as observing patterns in organizations from many industries that are attempting and succeeding at a cultural and management transformation.

Our fifth white paper “Principles for Personal and Organizational Transformation – Align”\(^30\) describes the principles behind the IEX model, specifically those principles primarily focused on aligning the improvement efforts so that individuals can have a clear “line of sight” between the work they do every day and how it connects to and supports the organization’s purpose.

Our sixth white paper “Principles for Personal and Organizational Transformation – Enable”\(^31\) describes the principles behind the IEX model, specifically those principles primarily focused on enabling people to be engaged in, and improve their work systems.

Our seventh white paper “Principles for Personal and Organizational Transformation – Improve”\(^32\) describes the principles behind the IEX model, specifically those principles primarily focused on improving the work.

Our eighth white paper “Systems By Design”\(^33\) describes the importance of design and redesign of key systems, in particular supporting systems of alignment, enabling and improvement. We describe a method, including a “system standard” that can help any executive and manager design and redesign key systems that will help them contribute to their organization’s purpose.

Our ninth white paper “True, True North”\(^34\) describes the benefits of more fully understanding True, True North and how this can avoid the trap of the narrow definition of True North only as measures. This matters, because without this understanding the pursuit of true north can merely be “management by results” in disguise.

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\(^1\) http://bit.ly/foundations
\(^2\) http://bit.ly/evolvingworldview
\(^3\) http://bit.ly/IEXDeploy
\(^4\) http://bit.ly/alignprinciples
\(^5\) http://bit.ly/enableprinciples
\(^6\) http://bit.ly/improveprinciples
\(^7\) http://bit.ly/systemsbydesign
\(^8\) http://bit.ly/truetruenorth
Our tenth white paper “Side (by Side) Management”\textsuperscript{35} describes a more useful view of the traditional hierarchy model, and the implications for connecting strategy deployment to daily management in order to provide value to customers, as well as facilitating true knowledge creation in the organization.

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**The Institute For Enterprise Excellence**

The Institute for Enterprise Excellence (IEX) was established in 2013 as a research, education and coaching institution that focuses on helping organizations build principle-based architecture to achieve world-class results.

Figure 12 illustrates our evolution of thinking in S-Curves.

We bring purpose to life by advancing the use of practical application of principles, systems and tools in pursuit of enterprise excellence.

What differentiates us is our Principle-based Deployment Model, the culmination of many years of application experience and continuous research in the field of behavior and performance.

![Figure 12. IEX Model Evolution](http://bit.ly/sidebysidemgmt)

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