

# Modeling a Next Continuum to Manage Process and Asset Change



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## Modeling a Next Continuum to Manage Process and Asset Change

Evidence-based medicine and design hold a common thread of professional lifelong learning. When reviewing this paper with a provider colleague, a further positive emerged known as Salutogenesis, introduced by Aaron Antonovsky in 1996.

Breslow L. (2006) in *Health Measurement in the Third Era of Health* recognized our need for a "sense of coherence (SOC)" addressing evidence-based life and personal lifelong learning. The tenets of salutogenesis and SOC - comprehensibility, manageability and meaningfulness - represent the premise of this paper. Salutogenesis seeks a comprehensible perspective that is holistic and orderly; a manageable framework that is harmonious and supportable; and a meaningful purpose that humbly relies upon credible research to discover a safe, simple and sustainable healthcare design future. Definitions of terms are provided by Lindstrom and Eriksson (2005):

*Comprehensibility refers to the extent to which you perceive the stimuli that confront you, deriving from the internal and external environments, as making cognitive sense as information that is ordered, consistent, structured, and clear; Manageability is the extent to which a person perceives that resources are at their disposals that are adequate to meet the demands posed by the stimuli that bombards them; and Meaningfulness refers to the extent to which a person feels that life makes sense emotionally, that problems and demands are worth investing energy in, are worthy of commitment and engagement, seen as challenges rather than burdens.<sup>1</sup>*

1. (B. Lindstrom and M. Eriksson, 2005, page 441)

As architects, our fundamental focus is on form follows function follows future. The management of change in the form of assets in an era of continuous advancements in technology; following the modeling of sustainable improvements to function and processes while facing constraints in personal, community, regional, and global resources; following a meaningful future of innate design abilities in concepts of care and in compositions of environment serving an evolving culture. The premise of SOC reflects a quest for clear perspective in our knowledge of technology, realistic framework to perceive control of our resources, and engagement on challenges with purpose in our personal and professional life.

In 2001, the Committee on Quality of Health Care in America of the Institute of Medicine (IOM) introduced *Crossing the Quality Chasm: A New Health System for the 21st Century* focusing on closing the quality gap between what we know to be good health care and the health care that people actually receive. The Institute for Healthcare Improvement (IHI) subsequently initiated *The Triple Aim*, a symbol of Quality Measurement and Improvement in New Era Medicine. The IHI Innovation Series and Associates in Process Improvement (API) model for improvement focus on *The Triple Aim* following Lean management principles in medical practice and continuous improvement initiatives. "The core idea of Lean involves determining the Value of any given Process by distinguishing value-added steps from non-value-added steps, and eliminating waste so that ultimately every step adds Value to the Process."<sup>2</sup>

2. (IHI 2005, p. 2)

## Comprehending Value-adds and Managing Meaningful Change

Today is the next day in the continuum of life we share, each of us in a different position, together. The one constant is change. Dictionary.com defines change as “to make the form, nature, content, future course, etc. of (something) different from what it is or from what it would be if left alone.” Change is an inevitable process, which cycles in time evolving at varying rates, revolving in differing circles, solving in positive directions, or dissolving in downward spirals of obsolescence. These traits exhibit patterns, categorized in three tiers of influence:

- Transcendent: Prolonged changes that are slowest and least influenced by our actions, often based in fundamental truths and discovered principles;
- Transitional: Rapid changes based on preferences, accepted practices and actions subject to the limitations of the environment, yet readily improved; and
- Transformative: Innovative changes that are subject to the laws of nature and limited by our knowledge yet are the foundation and seeds to make something different.

Throughout history, drivers of transcendent change have affected life in the primary aspects of society – technology, resources, and culture. In architecture, shearing layers of change represents how a building tears itself apart due to differing rates of change. During the 1970’s British architect Frank Duffy coined the concept of “shearing layers” to analyze building components in terms of layers of longevity to accommodate technological and organizational change. This concept was elaborated upon by Stewart Brand in *How Buildings Learn: What Happens After They’re Built* (Brand, 1995), and today is a key aspect in “resilient” building design.

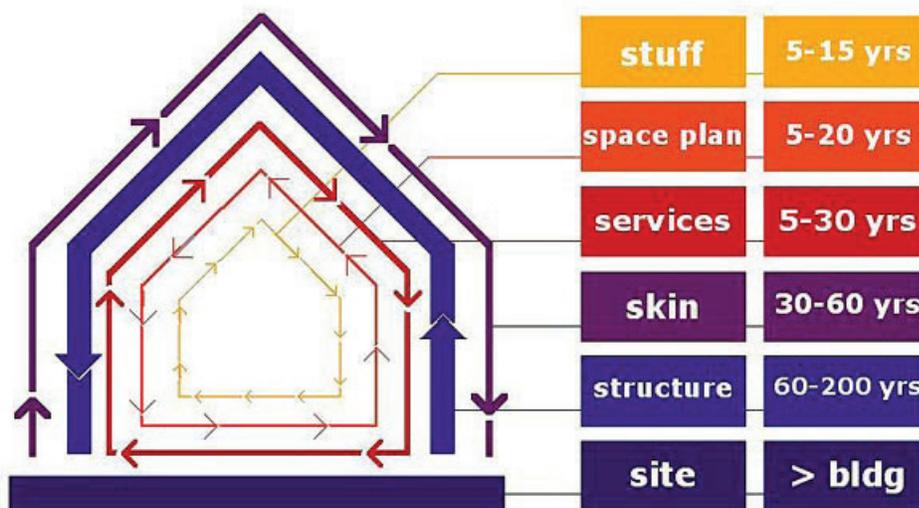


Figure 1:  
*Shearing Layers of Change.*  
Brand (1995)

Understanding transcendent, transformative and transitional change is fundamental to creating abilities for building assets to be continuously improved to add value.

## Transcendent Process: Value-balanced Economic policy / Evidence-based performance

“The process of scientific discovery is, in effect, a continual flight from wonder.”<sup>3</sup>

3. (Einstein, A., circa 1929)

We are in an era of obligation to reduce per capita healthcare costs that coincides with emerging opportunity in clinical anticipation, customer transparency, and humbling scientific discovery. Technology in medicine, life and design is driving strategic economic policy and scientific evidence-based performance at an increasing pace. Today there are constraints on capability due to facility conditions and site locations, and limitations on outcome potential as value-based accountability evolves, yet new balance in the economic / evidence equation represents an opportunity to align a policy of innate abilities with standards of performance process to improve outcomes and reduce costs.

To bridge the next quality gap, we must comprehend and capture the strategic level potential of technology. As the real world discovers the virtual world, the ability to decentralize is apparent in increased outpatient service, home health, and retail service / delivery clinics. Technology enables decentralization of location of bed-side assets for customer service at every scale, in all facility types, and in every realm of the continuum of health and care delivery.

### Outcome Capability

The outcome capability of decentralization is measured by connectivity between source of service and point of delivery. This connectivity is influenced by real walk-ability (access) within healthy communities, around health campuses, and within each environment of care; by real and virtual visibility (communication); and by the vast potential of virtual reality FTEs (automation). There will continue to be challenges for safe access, collaborative communication, and clinician response to automation requiring centralization of high-tech assets for higher acuity care, and for diagnosis and treatment requiring convergent collaboration, and these centralized outcome / performance capabilities represent tomorrow's hospital.

### Continuum Accounting

The technology-enabled virtual world of decentralized (unbundled) delivery and centralized (bundled) management of service is creating a new frontier in health and healthcare planning and design. Envisioning safe environments, simple access, and sustainable solutions remains fundamental, yet the opportunities for care automation through virtual visibility and virtual reality FTEs, and the corresponding depth of decentralized delivery capacity to handle future service utilization are changing the economic incentives of tomorrow's healthcare



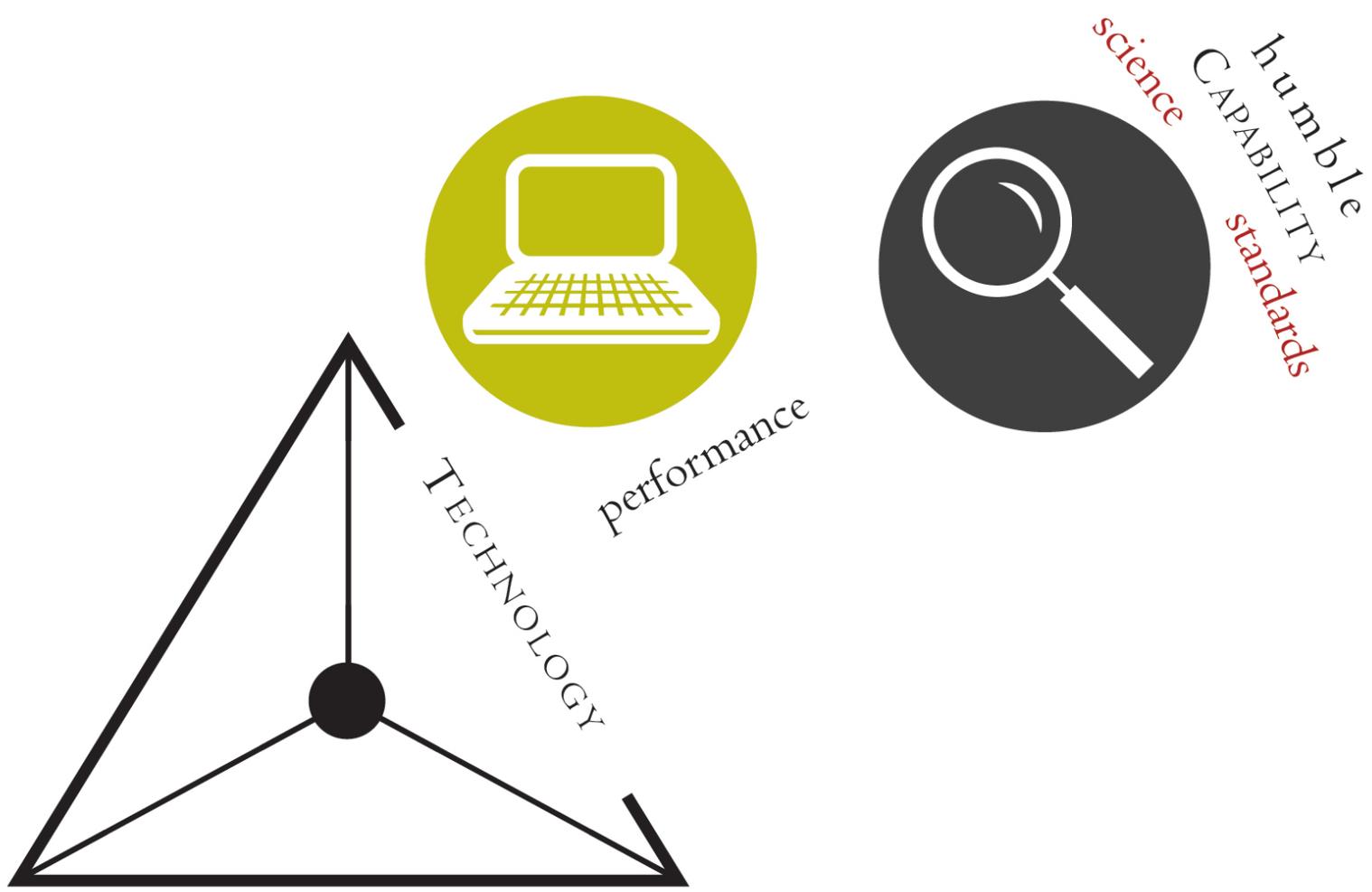


Figure 2 represents a juxtaposition of evidence and economics, and is the foundation of accountability and capability balance.



economy



Evidence



High-Tech



Bed-Side

Figure 2  
 Concept by D. Smith;  
 graphic design by  
 Orange Door Hinge

## Transitional Process: Personal Protocol Engagement / Generative Product Experience

“Improving health outcomes relies on patients’ full engagement in prevention, decision-making, and self-management activities...”<sup>4</sup>

4. (Brach, Harris & Parchman, 2013, p. 356-357)

At the core of health are the dynamics that generate our personal comprehension of healthy lifestyle protocols, and customer satisfaction during clinical encounters with representative products and enterprises. In today's value-based economic, personal protocol engagement is prefaced with patient anticipation through historic documentation retrieval, population health and patient segmentation data, and personalized genomic information. This individualized information is a meaningful and evolving health resource to both customers and clinicians. As such this natural resource is integral to our culture's expectation of ability to participate in healthcare protocol, and the generative partnership experience within clinical product encounters. Functional medicine integrates personal protocol management responsibility for nutrition, fitness, and diagnostic based medications and monitoring, with clinical awareness of customer environmental, genetic, chronic, and whole person – body, mind and spirit - wellness.

Functional medicine is a combination of Chinese Medicine, Western Medicine and scientific research. It combines philosophy of balance and how to restore function, and knowledge of biochemistry and physiology with latest scientific research about how our genetics, environment and lifestyle all interact.<sup>5</sup>

5. (Brach, Harris & Parchman, 2013, p. 356-357)

As personal participation and clinical partnerships evolve, synergy is developing between customer's life-long learning, the ability to anticipate clinical diagnosis, treatment and care responses, and the processes of protocol engagement and product experience. Generative space defines these principles.

Generative space is an environment, a place – both physical and social – where the experience of the participants fulfills the functional requirements of that space and it also materially improves the health, healthcare, and quality of life for those participating in that experience in a manner they can articulate in their own terms.<sup>6</sup>

6. (N. A., 2012).

In healthcare design, front-line information encounters are increasingly decentralized or part of the virtual world. As health management / support asset functions, off-stage nutrition and food service, fitness and rehabilitation, diagnosis and monitoring, and whole person wellness programs are integrating prevention with prescription and centralized information with management opportunities to empower common and shared real and virtual assets.

### Natural Resources

In a world of limiting resources, the values of a culture change to reflect new and natural resources of knowledge-driven customers and value-driven clinicians.

### Flex Capacity

Exponentially advancing modes of virtual and distance care delivery are changing the dynamic of capacity flexibility and adjustability to meet customer choice and demand

Figure 3  
Concept by D. Smith;  
graphic design by  
Orange Door Hinge

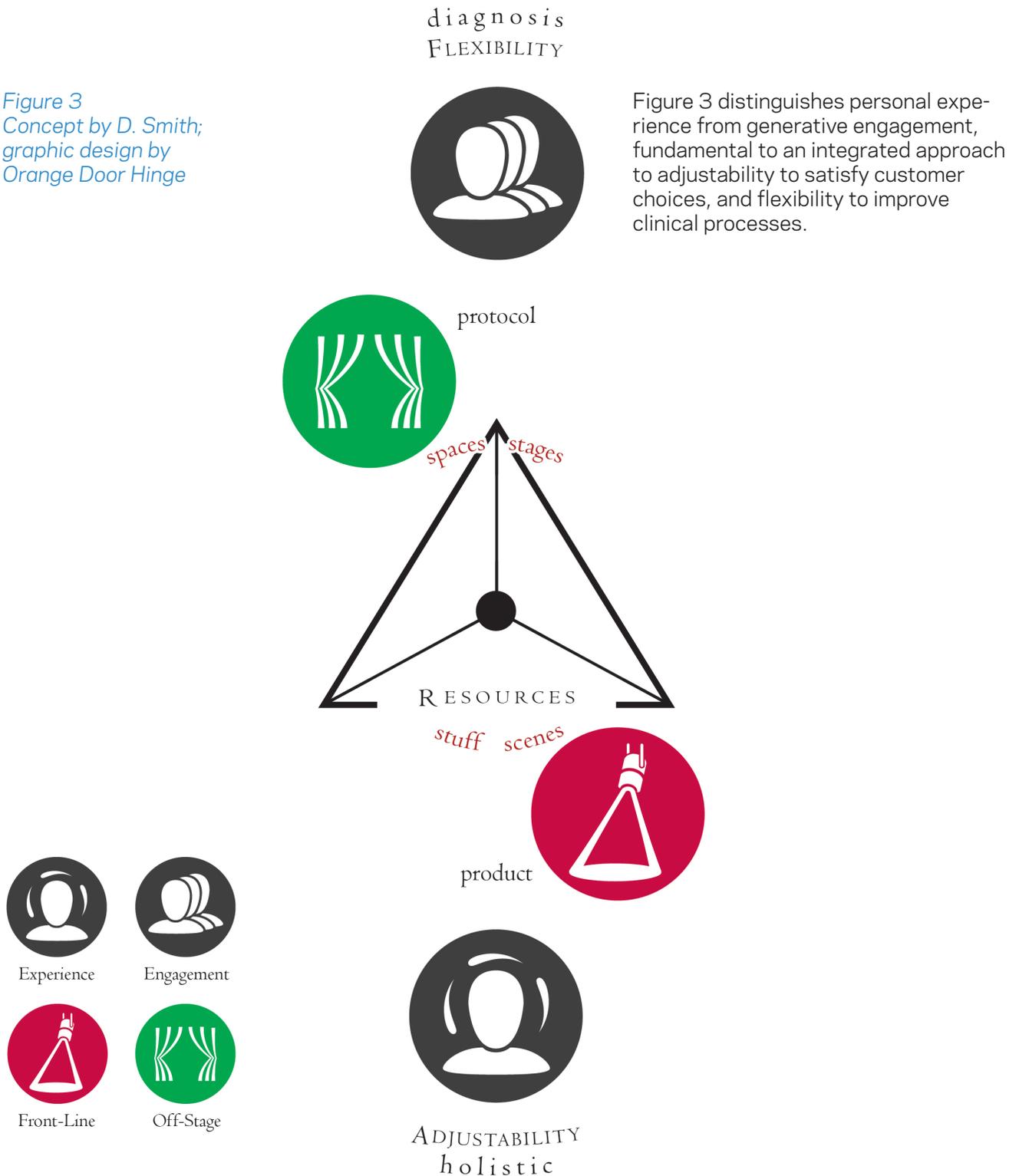


Figure 3 distinguishes personal experience from generative engagement, fundamental to an integrated approach to adjustability to satisfy customer choices, and flexibility to improve clinical processes.

## Transformative Process: prescriptive Evaluation / preventive Environment

Evidence-based design (EBD) is the “process of basing decisions about the built environment on credible research to achieve best possible outcomes.”<sup>7</sup>

7. (The Center for Health Design, 2005, webpage)

In the next eras of medicine, life, and design there are strong and convincing parallels reinforcing the promise of engaging ideals, enabling integration, empowering investment, and encompassing innovation that will yield quality improvement at reduced cost. To be in harmony with decentralization and the virtual world, the next era of assets must reflect an integrated approach to preventive lifestyle and prescriptive medicine. Recognizing the transformative processes of a culture of change and planned obsolescence are essential to a next era of health integration within design.

### Culture of Change

Within a diverse culture of young customers native to a digital era and older immigrants to this virtual world, the transformation to decentralization is gradual yet inevitable. Our growing native and conversant digital culture has an expectation of instant healthy lifestyle connectivity and integration with healthcare. The future hospital and places of healthcare will innately, transparently and continuously reflect and promote health improvement in all aspects of customer service and clinical delivery evaluation. Such a culture recognizes “blue zone” quality in a walkable community, regional ecology stewardship, and the natural balance of access to sunlight, nature, organic nutrition, regular exercise and healthy habits.

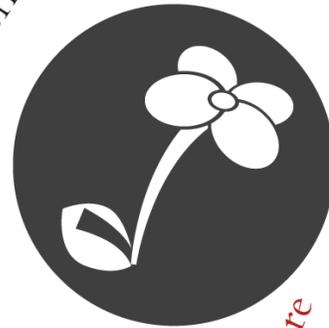
*Our built environment is the result of design ideas that came before us and were captured in landscape, wood, stone, steel, and concrete. We can use the tools at our disposal to tear down what is no longer useful and create a new vision for ourselves, our children, and our grandchildren.*<sup>8</sup>

8. (Jackson. 2012, p. 207).

### Planned Obsolescence

Deterioration of performance is the primary cause of obsolescence, yet in healthcare design functional obsolescence is a greater challenge. Creating an ability to grow - expandability, and ability to transform - adaptability is planned obsolescence for quality improvement while enhancing preventive and prescriptive processes. To satisfy evaluation, planned obsolescence, or resilient design, must respect differing rates and costs of change in the built environment. These rates range from relatively high cost of site / place that engages the built environment to specific locations and orientations; to a structure of fixed bays and clearances; to shell / core defining circulation and distribution; to skin that separates inside from outside; to systems that parallel circulation and distribution patterns, reflect capacity to satisfy demand, and represent “plug and play” opportunities; and on to space that is defined by established bays, circulation and distribution. Planning for expandability focuses on evaluation of site / place, structure, and shell / core assets, while planning for adaptability focuses on evaluation of skin, systems, and space assets.

h a r m o n y  
EXPANDABILITY



structure



Asset management entails decisions to retain, replace or renovate; to maintain, enhance or eliminate; or to sustain, adapt or expand, each aligned with outcome capability and attuned to value-add accountability in the process stream.

Figure 4 represents a resilient business case perspective on asset investment for service expandability to evolve health and preventive practice, and delivery adaptability to advance prescriptive diagnosis and treatment

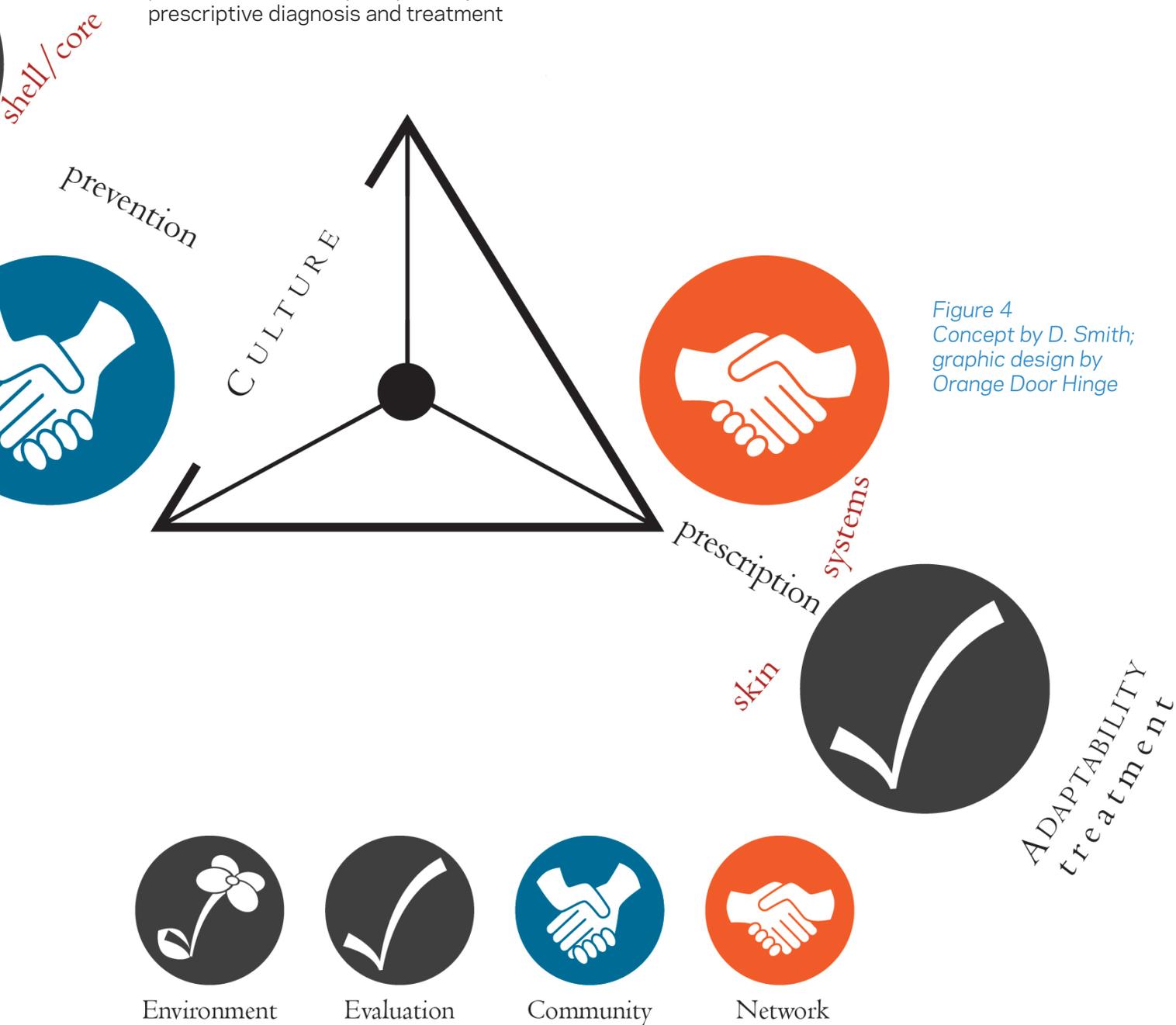


Figure 4  
Concept by D. Smith;  
graphic design by  
Orange Door Hinge

Figure 5  
 Concept by D. Smith;  
 graphic design by  
 Orange Door Hinge

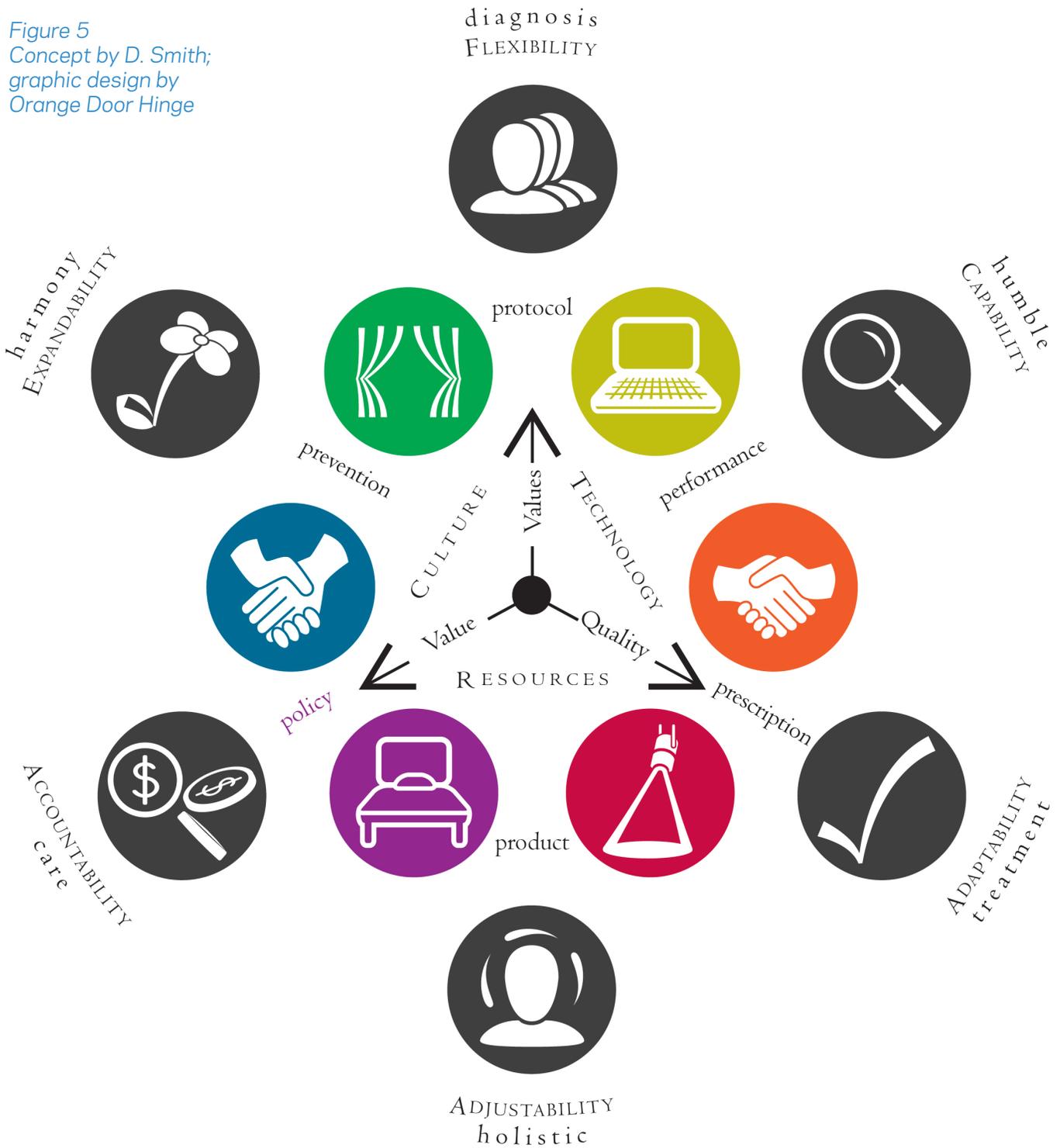


Figure 5 represents a framework for a dynamic integrated approach to asset management founded on fundamental value-add abilities to support continuous process improvement and promote healthy lifelong learning.

## Conclusions: Comprehensive Asset Management Perspective

The purpose of this paper is to outline a comprehensible perspective that is a holistic, orderly and integrated approach to lifelong learning; to establish a manageable framework for asset change that is harmonious and supportable; and to demonstrate meaningful purposes that humbly seek to inspire credible research to discover a safe, simple and sustainable healthcare design future. The approach, framework and inspirations include outcome capability in evidence; continuum accounting in economics; flex capacity in experience; natural resources in engagement; planned obsolescence in environment; and a culture of change in evaluation.

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