ANTICIPATING ORGANIZATIONAL COMPETENCES FOR DEVELOPMENT THROUGH THE DISCLOSING OF IGNORANCE

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ABSTRACT

Organizations pursuing development of their competences must balance the pursuit of mastery in the present against the potential of innovations that may enable success in the future. In the present, key competences can be identified as work practices essential to the satisfaction of customers and other stakeholders. These competences may be improved incrementally, and/or more widely disseminated across the enterprise. In the future, however, the "right" competences to be developed are less clear. The potential customers, emerging technologies and/or key factors of competitiveness in the future are uncertain. The competences that are distinctive in the present may not be the competences that provide distinction in the future.

An approach that is currently popular is to view organizational activities from a perspective of knowledge. Inquiring systems provide a compatible foundation for this view. A related, but different view is based in social practices. Defining organizational competences in terms of social practices provides a more grounded understanding of action, but requires additional study on how change can be influenced and enabled. An approach based on disclosing new worlds can extend the social practices framework to be applied prescriptively.

The disclosing of ignorance is proposed to uncover competences that should be developed in anticipation of an uncertain future. A framework created in the *Curriculum on Medical Ignorance* at the *University of Arizona College of Medicine* is extended for application into the domain of business. In this domain, forms of ignorance are grouped into four categories, as: (a) known unknowns; (b) passive ignorances, as "ignoring" – including errors and unknown knowns; (c) unknown unknowns; and (d) active ignorances, as "the ignored" – including taboos and denials.

The first two categories are normally handled through focused research, and intercommunication programs where expertise and practices are shared. The latter two categories, however, are rarely addressed explicitly. They require more provocative forms of disclosing, so that "new worlds" can be presented as viable and desirable ways forward. The subject of ignorance may itself be a taboo in an organization. Issues with the dissemination of disclosing are discussed.

Keywords: ignorance, unknowns, organizational competence, learning, disclosing

Anticipating Organizational Competences through the Disclosing of Ignorance

INTRODUCTION

Most business executives would agree that the development of organizational competences is instrumental both in ensuring customers are effectively served, and competitors are kept at bay. The key challenge is then to determine *which* organizational competences should be primarily developed. An incremental approach is continuous improvement, whereby the organization does what it does now, but a little better. Guidance on non-incremental improvements is not so clear. An effective organizational competence program must balance the strengths of the business today, with potential directions that will position them well for the marketplace in the future.

Over the past decade, management research has developed a large body of work in organizational learning, most recently with an emphasis focused on the management of knowledge. As a contrarian approach, organizational competence development can be based on the reduction of ignorance. An approach based on ignorance is not in complete opposition with one based on knowledge, and may leads to alternative paths with valuable payoffs.

To embrace ignorance, it must not be viewed as inherently negative. In the development of organizational competences, ignorance can also be seen as a positive force for directing human and organizational understanding in new directions. In ancient Greece, the followers of Parmenides identified knowledge as light and ignorance with the darkness.[1] In their world view, the view of knowledge as good and ignorance as harmful was compatible with a reality based on stability and changelessness. Heraclitus advocated the opposite position, with a belief that only that which changed was real. "He who does not expect will not find out the unexpected, for it is trackless and unexplored".[2] The views of Parmenides and Heraclitus are neither each completely right nor completely wrong, and reflect a dualism into which energy that can be focused. Organizational competence development can draw on this delicate interplay between knowing and not knowing. The organization needs to adopt a non-defensive predisposition towards unknowns, and cope with them with vigor similar to that which is applied to the known. The disclosing of ignorance can be particularly valuable in ambiguous and creative situations, where creativity and unconventional thinking is highly valued.

Understanding the function of ignorance in organizational competence development presupposes an understanding of organizational practices, and the disclosing of new worlds. Prior to this discussion, complementary definitions of competence and capability are provided.

ORGANIZATIONAL COMPETENCE DEVELOPMENT SHOULD REVITALIZE PRACTICES, ON BOTH IMMEDIATE AND FUTURE HORIZONS

Organizations developing their competences must always keep one eye on the present, and another on the future. In the present, work teams continually evolve their practices, as they

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[1] For a concise biography of Parmenides, consult the Internet Encyclopedia of Philosophy at http://www.utm.edu/research/iep/p/parmenid.htm.
[2] Kahn (1979), p. 31.

"learn-by-doing". They can be encouraged to share their experiences about "better" ways to get work done, not only within their own work groups, but also across functional and organizational boundaries. The future, however, continually presents new opportunities and threats, such as emerging technologies, changing customer interests and dynamics in a competitive marketplace. The ability to continually create and capture value may depend on the ability of the organization to not only stay one step ahead, but an entire generation ahead. Competitors in close pursuit will always be looking for an opening to leapfrog the leader. Focusing on the present bears risks in missed opportunities and unheeded threats. Focusing on the future bears risks in mistaken spurious trends and ill-timed forays into unfruitful territories.

An organizational capability responds to a customer request through the organizational competences to perform

Organizational capabilities and organizational competences are closely related. An example may be helpful to contrast nuances between capabilities and competences. A taxi fleet provides a social function of transporting people and small packages from one point in a city to another. This social function is enabled by a number of organizational capabilities that involve a number of organizational competences. Organizational capabilities include order dispatching, vehicle provision, and driver scheduling. Organizational competences include wayfinding, vehicle maintenance and safe conveyance. Making such fine distinctions between capabilities and competences begs for a clarification of definitions.

We propose a definition for organizational capability that is rooted in a systems design perspective:

> An organizational capability is an available resource that has the potential for producing an outcome.

The idea of producing an outcome subtlely suggests a functional view of organizational capabilities.

- If the organization applies resource, but the customer does not find value – directly or indirectly – to that effort, then the potential outcome does not represent a capability to that customer. A taxi fleet that is not licensed to transport a passenger to a desired destination should not be considered as presenting a feasible capability.[3]
- The total pool of resource available at any point in time is an organizational decision. If the resource – again direct or indirect – is not available to support production of an outcome when requested by a customer, then it does not represent a real capability at that time.

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[3] This customer/functional view of organizational capabilities is more general, but not inconsistent with that provided by Stalk, Evans, and Shulman (1992) with the phrase of "value chain": "[Competencies] and capabilities represent two different but complementary dimensions of an emerging paradigm for corporate strategy. Both concepts emphasize 'behavioral' aspects of strategy in contrast to the traditional structural model. But whereas core competence emphasizes technological and production expertise at specific points along the value chain, capabilities are more broadly based, encompassing the entire value chain. In this regard, capabilities are visible to the customer in a way that core competencies rarely are".

> Customers should question the authenticity of a taxi fleet that espouses service 24 hours each day, but is unable to provide a car at late hours or in poor weather conditions.[4]

- In an organizational context, capability expressed at the level of a single worker is not our primary interest. From a systemic perspective, our focus is capabilities in which the organization as a whole has the potential to produce, but which no subsystem alone can produce. A customer hailing a cab passing on the street does not actively invoke the organizational capability to dispatch. A customer that prefers a vehicle suitable for transporting a wheelchair or large package does invoke an organizational capability by contacting a dispatcher who will locate an appropriate car.

Organizational capability represents a potential function of the organization as a whole. This view of capabilities is based in an understanding of open purposeful systems[5] and exchanges in capital[6].

In contrast to an organizational capability viewed as a system-level property, organizational competences are parts that support production of a functional outcome. In a taxi fleet, dispatching is an organizational capability.[7] A customer can call a dispatcher to locate an unoccupied taxi nearby, and send it to the designated pick-up point. Behind the scenes, the dispatcher may invoke various organizational competences. Locating a car may be supported through a low-tech or a high-tech approach. A low-tech approach based on voice technology has each driver calling in verbal reports when each fare is picked up and dropped off. The dispatcher maintains a mental or written snapshot of available and engaged taxis, probably with a heuristic of zones or districts. A high-tech approach based on radio location changes the vehicle's availability status when a driver starts or stops the meter in the taxi[8]. The dispatcher's computer could then mathematically suggest the best selection from the fleet, based on an algorithm of proximity to the pick-up point, and the waiting period since each driver's last fare. An organizational capability is generally supported by a combination of competences. This organizational competence of taxi location is distinct from the competence of maintaining clean and functional vehicles, and competences of hiring and scheduling competent drivers.

We propose the following definition for an organizational competence, rooted in theories of practice and social theory:

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[4] Our use of the "resource" is probably more general than that proposed by Teece, Pisano & Shuen (1997), where capabilities are expressed in terms of competences: "The term 'capabilities' emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment". [p. 515]

[5] A detailed framework for understanding human systems in terms of purposes is provided by Ackoff & Emery (1972).

[6] These exchanges of capital include social forms, such as symbolic capital. See Bourdieu & Wacquant (1992).

[7] Dispatching designs are more fully discussed in Ing & Simmonds (1999), particularly as Tension 1 and Tension 2 in Section 5 of the article.

[8] In the case of Internet-based booking, voice communication can be completely eliminated. One example is RadioTaxis, at http://radiotaxis.net .

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> An organizational competence is an expertise shared by members of a work group to apply skills, tools and infrastructure towards effective performance in response to a prospective or prior situation.

This definition addresses a number of concerns:

- Shared expertise suggests distinct practices that can be executed by any of number of individuals with similar experiences and/or training. Individuals in the work group may identify with professions or communities of practice.[9] Every taxi driver licensed in London must meet the standard of demonstrating "The Knowledge" of all public landmarks within a six-mile radius.[10]

- The application of skills, tools and infrastructures is socially-centered and oriented towards action.[11] Skills are the human ability to apply tools. Tools are instruments or implements that are applied to extend human faculties. Infrastructures are settings in which productive work is enabled. The experience of using skills, tools and infrastructure is embodied in individuals participating in work groups, and not in documents that specify standard procedures.[12] A Global Positioning System (GPS) installed in a car is part of an infrastructure upon which a driver may or may not rely, based on previous experiences.[13]

- Effective performance is judged situationally. One members of a work group need not conduct work activities in exactly the same routine manner as another. Each skilled worker may apply expertise to make fine adjustments based on the situation at hand. The end result, however, should satisfy the same general requirement, while reflecting the particular circumstances of each specific situation.[14] Two drivers given the same starting

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[9] Competence is closely related to communities of practice and identity in Wenger (1998). "[The competence required] is not something that we can claim as individuals because it implies a negotiated definition of what the community is about. But neither is it something that is just a property of a community in the abstract, that can be awarded through some decision, because this competence is experienced and manifested by members through their own engagement in practice. …. A community of practice acts as a locally negotiated regime of competence". [pp. 136-137]

[10] A good description of 'the Knowledge" by the London Taxi Times appears at http://www.thelondontaxi.co.uk/page3.htm .

[11] Studies oriented towards the use of tools tend to move away from the Cartesian approach of subjective and objective understandings of reality, and towards postmodern phenomenological approaches. Bourdieu's concepts of habitus and field play here, as well as Dreyfus' commentary of being-in-the-world drawn from Heidegger.

[12] The emphasis on combination of elements is consistent with Hamel (1994): "First, a competence is a bundle of constituent skills and technologies, rather than a single, discrete skill or technology. .... A core competence represents the integration of a variety of individual skills. It is this integration that is the distinguishing hallmark of a core competence. Thus a competence is very unlikely to reside, in its entirety, in a single individual or small team. …. Second, a core competence is not an "asset" in the accounting sense of the word. …. A core competence is not an inanimate thing, it is an activity, a messy accumulation of learning. A core competence will undoubtedly comprise both tacit and explicit knowledge". [pp. 11-12]

[13] The potential for GPSs in London taxis is described in "Invasion of the Taxi Snatchers", Time Europe, April 7, 2000, at http://www.time.com/time/europe/webonly/londoneye/2000/04/londontaxi.html .

[14] This aspect of performance is consistent with one provided by the International Labour Organization at http://www.ilo.org/public/english/region/ampro/cinterfor/temas/complab/xxxx/1.htm#5 . "[Competence is] an effective ability to successfully carry out some labour activity which is totally identified. Competence is not a

point and destination may or may not choose the same exact route, but those rides should be roughly equivalent in comfort and travel time.

Organizational competences may be allowed to passively emerge as the mere accumulation of personal competences, but they may also be actively directed, enabled and disabled by management. Human beings each possess personal competences that may or may not be encouraged or developed in an organizational context. Ensuring an organizational competence may require an investment, e.g. employee training to bring all workers to the same standard, or standardization of tools to reduce obstacles to collaboration. If an organization views itself as an ongoing entity with some identity greater than the collection of its individual workers, then competences must be developed in the systemic whole. Otherwise, the enterprise should be regarded as a collection of subcontractors, without ongoing synergy from collaborative work.[15]

Organizational competence development may be driven by both immediate and long-term interests

An organizational competence development program would normally be included as part of a long-horizon strategic plan. In *Adaptive Enterprise*, however, Steve Haeckel argues that the premise of "strategy as planning" is dead.[16] In the industrial age, coherency in business direction was traditionally guided through strategic plans with long horizons. As the business environment has become more and more unpredictable, however, enterprises have reduced ten-year plans to become five-year plans, to become two-year plans, and maybe even three-month plans. At this point, the concept of "strategy as planning" becomes meaningless. Organizational competence development requires a perspective beyond immediate and visible business opportunities.

Centering on customers provides an external reference point for long-term business direction. Businesses are challenged to "respond" to shifts in customer tastes, as well as their potential defection to new competitors and/or alternative technological advances. "Responding" to customers is different from "reacting" to them. This difference reflects two views of adaptiveness. Adrian Slywotsky draws a distinction between sense-and-respond as "listen-and-comply" and sense-and-respond as "anticipate-and-preempt".

> As the company develops its sense-and-respond skill set, it elevates sense-and-respond from listen and comply to anticipate and preempt.
>
> Sense-and-respond helps us to be on time – on market time. Very good sense-and-respond helps us be early. But a superior ability to sense and interpret signals about changing customer needs before they mature into formal requests helps us to get there sooner still, soon enough to preempt the next major opportunity and to create an unassailable leadership position. [….]

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probability of success in the execution of one's job; it is a real and demonstrated capability." The web site also points to additional definitions in use.

[15] Steve Haeckel provides a helpful clarification of synergy as a property that is *different* from that which can be produced by the parts, as opposed to just *more* of that which can be produced by the parts.

[16] See Haeckel (1999), Chapter 3 "Strategy: Past and Future".

> Anticipate and preempt has tended to be the preserve of fast-moving, close to the customer, risk-taking entrepreneurs. As a result, the majority of value migration winners in the last decade have been newcomers, not incumbents. But no law says that it must be this way.[17]

Many organizations aspire to transition from "make-and-sell", towards a "listen-and-comply" orientation.[18] They modularize the organization so that a response is not fully assembled until a specific customer request has been made[19]. As an example, consultancies retain a skilled staff from which a team is drawn, when the needs of the customer have been understood. They are designed to operate less like a bus service that runs on predetermined routes, with or without passengers. They should operate more like a taxi fleet that dispatches capabilities to satisfy the need of particular customer requests.[20] The "listen-and-comply" style suggests that needed competences can be anticipated, the capabilities can be pre-established, and the "go signal" is the customer request.

An "anticipate-and-preempt" style presumes a market leadership orientation and a willingness to develop competences at some risk in anticipation of future business. Customer interests may be evolving rapidly, due to changes in taste, fashion or technology. Competitors may be able to rapidly replicate innovations, and patent protection may be infeasible, unenforceable or just too slow. If an organization has a deeper understanding of how customers could be better served and/or more satisfied than the customer himself or herself, an "anticipate-and-preempt" approach can preserve value creation and capture. Acting in advance of customer request requires the organization to sponsor the development of competences that will enable capabilities in the future. This sponsorship is required when the customer does not immediately see the benefit of competence development, but the organization does. The time required to develop the skills, tools and/or infrastructure is likely to be well beyond that required to immediately respond to the single request of a single customer. The assembly of organizational capabilities to satisfy a specific customer should be countable in hours. Developing skills, tools and/or infrastructure can take months or years. The organization must be willing to take the risks associated with anticipation, with sufficient adaptiveness to alter course when confronted with a blind alley or unexpected turn of events. It may have to face an "innovator's dilemma" and time its actions so that it doesn't abandon their current set of satisfied customers until the market for the new innovations is sufficiently mature.[21]

Competence development requires balancing "doing the thing right" with "doing the right thing"

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[17] Slywotsky, in the Foreword to Haeckel (1999), p. xiv.

[18] "A business has only two options: to make offers to customers or to respond to their requests. This essential difference separates make-and-sell from sense-and-respond organizations". See Haeckel (1999), p. 10.

[19] The idea of modularizing the organization is related to the idea of mass customization described by Pine (1993), but is not exactly the same. Mass customization usually connotes a manufacturing or production orientation.

[20] See Haeckel (1999) Chapter 4 "The Sense-and-Respond Alternative, particularly on "Make-and-Sell Buses versus Sense-and-Respond Taxis", pp. 60-62.

[21] See Christensen (2000).

When organizational competence is viewed as a closed system, the emphasis is typically on "doing the thing right". Practices are incrementally improved by reflecting on the way work is done in groups, sharing experiences, and adapting that learning to new situations as they arise. This is particularly true when the competences are related to delivery or performance. Organizational processes can always be made more efficient through the refinement of skills, honing of tools, or better utilization of the supporting infrastructure.

An alternative view of organizational competence is as an open system, with an orientation towards "doing the right thing". Practices are then viewed in the light of capabilities, and the potential for the organization to create and capture value through a better understanding of customers' interests. The perspective shifts from those producing deliverables in favor of ensuring that customers are receiving an outcome of value. Improvements to skills, tools and infrastructure are not motivated solely from the workgroup's internal identification of a "better way". Skills, tools and infrastructure are viewed in the light of contribution towards customer value and the potential to produce a superior outcome.

"Doing the thing right" is a pursuit of efficiency. "Doing the right thing" is a pursuit of effectiveness.[22] The former draws on extending existing practices to improve competences which are known and understood. The latter may require a leap to new practices that are not only different from current practices, but are either unconsidered or unknown. This leads us to explore the opportunities with disclosing organizational ignorance.

PRIOR PRACTICES MAY INDICATE A GROOVE FOR ORGANIZATIONAL COMPETENCE DEVELOPMENT, OR A RUT

Organizational competences can be allowed to evolve naturally. Competences deepen with practices built on practices commonly in use. Members of a community of practice share lessons of learning-by-doing, and incremental improvements accumulate. At certain points in time, however, motivated either by internal or external pressures, the organization will be challenged with the question: are we doing the right thing? This may lead to formal or informal modes of inquiry. Inquiry is, however, only a thinking process, and may not be directly linked to action. The development of competences may require management to actively disclose new worlds that were not previously evident to workers. Changing the trajectory upon which organizational competences are developed requires more than just an intent to do things differently.

Organizational competences are rooted in practices that are socially reproduced in communities

Organizational competences are shaped not only by the formal structures in organizations, but in the communities of individuals who work together to get the job done. Etienne Wenger describes

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[22] The efficiency / effectiveness descriptions are commonly used by Russell Ackoff and by Peter Drucker.

the linkages between learning, meaning and identity in the operation of communities of practice.[23] Pierre Bourdieu provides a more general model for society at large in the ideas of habitus, capital and field.[24] In both cases, individuals shape the social structure around them, and the social structures shape the individuals.

The challenge to developing organizational competences, when approached from a social practice perspective, is that structures tend to be self-reproducing. Thus, in Wenger's description of a community of insurance claim processors, competences are developed by individuals watching and learning from the experience of others who have been legitimized and socialized into the identity of a claim processor. The practices are reproduced from the more experienced to the less experienced. An individual remains peripheral to the community until he or she adopts the practices commonly accepted as defining a competent insurance processor. In the field of academia, Pierre Bourdieu has noted similar reproduction of practices. Practices of scholarship internalized by professors and researchers at universities and colleges become standards by which newcomers must be prepared to play, if they are to be accepted into the field. The natural direction for these institutions – formal or informal – is to continue to perpetuate their views and practices, as an extension of the trajectory with which they have come to this point.

The natural social reproduction of practices leverages innate human abilities to operate in environments of uncertainty, learning through the observations of peers, and replicating actions. These are practical skills. Even without formal training, a complete set of instructions and/or close monitoring, facile individuals can pick up practices common in the community. They become insurance claim processors or professors and researchers. The major organizational challenge with this natural reproduction of practices is that practices-in-use are incumbent. Innovations or variations introduced by an individual or a small sect within the community may or may not become the norm for the group. Questions about whether the community is doing "the right thing" are difficult, because everyone does the same thing. In business, external forces of customers and competitors may, however, drive an organization to redirect competences. Practices which are no longer distinctive may need to be reduced or obsoleted, in favor of new practices that are create greater value.

Social knowledge is produced through inquiring systems

In the systems science community, inquiring systems has been a rich body of social systems research. In a question of the "right thing" to do, fostering change can be aided through appreciating the way that a social group collectively understands the world. Mitroff & Linstone provide a definition for an inquiring system.

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[23] See Wenger (1998).

[24] In his course on Contemporary Sociology Theory at NYU, Craig Calhoun provides a concise reading on Pierre Bourdieu. See http://www.nyu.edu/classes/calhoun/Theory/paper-on-Bourdieu.htm .

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> An Inquiry System … is a system of interrelated components for producing knowledge on a problem or issue of importance.[25]

The inter-related components are structured in a simple model with four parts:

- *Inputs*: The valid starting points of building blocks of knowledge
- *Operator*: Transforms the inputs into knowledge
- *Outputs*: Valid outputs for action
- *Guarantor*: What guarantees that the Input, Operator, etc. are "correct" so that valid Output will result?[26]

Five types of inquiring systems are described, as "ways of knowing", through related works by Mitroff, Linstone and Churchman. The descriptions can be concisely listed in a table.

Way of Knowing	*Mitroff & Linstone (1993)*	*Mitroff (1998)*	*Churchman (1971)*
First	Inductive – Consensual	Expert Consensus	Locke: consensus
Second	Analytic – Deductive	Expert Modeling	Leibniz: fact nets
Third	Multiple Realities	Multiple Models	Kant: representations
Fourth	Conflict	Conflict	Hegel: dialectic
Fifth	Unbounded Systems Thinking	Systemic Reasoning	Singer: progress

The first and second ways of knowing are based in objective views of knowledge. The third way of knowing recognizes subjective views, where the model and data are inseparable in the minds of individuals. The fourth way of knowing generates knowledge through debates from polar positions. The fifth way of knowing incorporates aspects of the preceding four ways, with a guarantor of "progress" that ensures more perspectives and views are swept in. The first four ways of knowing have been influenced and discussed by philosophers for many centuries. This fifth way of knowing is notable to business people as having been applied in large-scale industrial settings, such as General Motors[27] and in community planning[28].

Inquiring systems on their own, however, have do not follow through with an understanding of action, or of social practice. Even when community members know that they should change direction, they often don't behave that rationally. They know the right thing to do, but don't do it.

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[25] The concise definition is provided in Mitroff & Linstone (1993), p. 29, with a non-specific footnote to Churchman (1971).

[26] These four inter-related components are drawn in Mitroff & Linstone (1993), p. 31, as Figure 2.2.

[27] Concepts are laid out in Barabba & Zaltman (1991) and then explained in application in Barabba (1995).

[28] Search conferences were developed by Fred and Merrelyn Emery. The techniques are described in Emery & Purser (1996).

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In the context of competences, the social reproduction of practices often overwhelms inquiry. Knowing the right thing to do is not enough. This is a trap.

Redirecting organizational competences requires recognition of "new worlds" to be disclosed

The challenge with developing organizational competences is that practices are always a variation of some previous experience. Humans are not machines that can be turned off and restarted with minds as blank slates. If an organization does not have a competence at the level of a social group, individuals will improvise based upon their wealth of personal skills. The absence of personal skills does not stop human beings from working on a problem. The way in which work is carried out may not be the most effective or efficient, but human beings are natural problem-solvers. They will develop practices, learn from each other, and develop some form of organizational competence. If the path is difficult, the social group may form even stronger bonds, as momentum builds on experience of and facility with the practices with which they identify.

This momentum is a form of social reproduction of practice. A rationalist might express the challenge as "once you know, you can't unknow". In contrast, a phenomenological view would express that an organizational team has experienced this situation before, has applied some practices, and the results have been successful. This doesn't mean that other ways don't exist, but team members are confident that their practices have been proven. In extremis, when the principal organizational competence has been hammering, problems can be shaped to look like nails.

The challenge in making dramatic changes to organizational competences is then not just to focus reductively on the procedures and workflows of current practices. The challenge, from a phenomenological perspective, is to ensure that the workgroup sees a new world, in which situations do not appear closely like ones that they have experienced before. In this new world, hammering in the way appropriate to the old world is no longer obviously effective. Hammering may even appear to be counterproductive. This represents not just a shift from one frame to another frame, but possibly a complete reconstruction of the worldview in which prior frames are nonsensical.

The challenge for organizational competence is not just an incremental change in everyday practice. The challenge is foundational disruption in the style of action which has become natural to the workgroup, down to the level of practices which are so much in the background that individuals don't think about them. Charles Spinosa, Fernando Flores and Hubert Dreyfus contrast minor changes that would be categorized as being in keeping with existing style with "history-making" change that represents a completely different style.[29] As work teams realize that they are in a "new world", they must appreciate that their prior style may be inefficient or ineffective. Instead of following natural inclinations, they may have to think twice and focus on conducting work in a different way. If the "new world" is accepted as the context in which social practices need to be adapted, the old practices will give way to new practices.

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[29] See Spinosa, Flores & Dreyfus (1999).

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Organizations can encourage the necessary shifts in competence as "new worlds" by altering the environment around work practices. As an example, consider the shift of business professionals from a style of centralized offices to new mobile workplaces connected via the Internet. The removal of infrastructures that support old practices, simultaneous with a new replacement, signals that a prior style has been outmoded. Co-workers can no longer be found in permanent offices, as real estate blueprints change. The easiest way to locate someone has become instant messaging or a personal cellular telephone. Making old tools scarce while enabling new tools reinforces the change in worldview. The removal of administrative staff who track the physical locations of people and availability of meeting rooms encourages individuals to contact others directly through instant messaging or short message services, and book meetings and rooms on electronic calendars. Finally, new organizational competences may be encouraged by skills training and/or mutual support. Professionals can learn how to schedule teleconferences or web meetings by reading instructions on an Intranet web site, through lunch-and-learn seminars, and/or just-in-time informal coaching by peers.

Business people may resist the development of new organizational competences not merely because of inertia, but because they are skilled in a prior environment, and do not realize that they are in a different and new world. This is a form of ignorance, or selective blindness.[30] Some in the organization will recognize a "new world" before others. The challenge is then for those who appreciate a new world to disclose it positively to others who do not yet see it. When all members of a work group can identify the new world as different from their prior world, their shared style will change. If some migrate to the new world, and others remain in the prior world, organizational competences will not uniformly be developed, and two styles will continue to exist, with or without friction.

HISTORY-MAKING BREAKTHROUGH PRACTICES RELY ON UNCOVERING MULTIPLE TYPES OF ORGANIZATIONAL IGNORANCES

If organizational competences must be developed to cope with a new world, how does the organization proceed? Both undirected and directed approaches are possible. One undirected approach is creativity development. Individuals can be encouraged to "brainstorm" through lateral thinking classes, the introduction of non-traditional implements and a fun work environment. New competences may or may not emerge from such programs, but they do encourage a break from incrementalism.

We suggest an organizational ignorance quest as a directed way to disclose opportunities for breakthroughs in organizational practice. This is in contrast to traditional knowledge management programs framed in the idea "if we only knew what we know, we'd all be a lot smarter".[31] This orientation has led to initiatives that "leverage what we know". Expertise location mines electronic documents to create semantic maps, and represents organizational competences through keyword

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[30] One way of describing this blindness is the Johari window, described in Luft (1961).
[31] This quotation was originally cited to Lew Platt at Hewlett-Packard.

searches so that "experts" are more readily accessible when challenging situations arise. Codifying tacit knowledge into explicit forms can be encouraged through the formal documentation of methods and after-action-reporting.[32] An organizational ignorance quest takes the contrary view from what the organization "knows", but instead on what the organization doesn't know. Competences need to be developed not to handle those situations that the organization can see, but instead those that it can not immediately see. This follows the idea that "it's not what we know that will kill us, it's what we don't know". From an organizational inquiry perspective, we are interested in "sweeping in" new perspectives and orientations beyond the current base of experiences.[33]

An organizational ignorance quest pursues challenges in four areas

The body of work focused on ignorance is small when compared to the immense interest in knowledge, and the large number of philosophers working in epistemology. We draw primarily on two sources: Michael Smithson, a researcher into risk and uncertainty in Australia; and Ann Kerwin, Marlys Witte and Charles Witte, who developed the "Curriculum on Medical Ignorance" at the University of Arizona College of Medicine. We see parallels between the training of physicians and the development of competence in business organizations. When doctors are in practice with patients, they need to portray confidence in their findings. When given bad news, a patient may ask "Doctor, are you sure?" A lack of confidence only increases the discomfort of a patient. Physicians, however, need to be trained to appreciate the limits of science. The continual discovery of new treatments and drugs is a testament that the practice of medicine is constantly evolving. The idea of practice needs to include aspects of ambiguity and uncertainty. In practices associated with business, the same openness to ignorance needs to be developed.

We propose approaching ignorance in four areas:

- known unknowns;
- passive ignorance, as ignoring (which includes errors and unknown knowns)
- unknown knowns; and
- active ignorance, as the ignored (which includes taboos and denials).

Each of these four types of ignorance appears with different symptoms, and requires a different type of remedy. All four types should be considered, or ignorance will continue to be a creeping problem.

Ignorance related to organizational competence development does not present exactly the same context as that of physician training. Care should be taken to apply the ideas properly.

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[32] After-action-reporting is particularly popular in the arms forces, where organizational learning is actively sought after a military engagement.
[33] "Sweeping in" is key component of a multiple perspectives systems approach to inquiring systems suggested by C. West Churchman.

Anticipating Organizational Competences through the Disclosing of Ignorance

Firstly, ignorance is an organizational challenge, as well as a personal challenge: Although many physicians do operate as independent practitioners, our interest in organizational competence is more akin to medical specialists who band together in clinics, or coordinate services in a hospital. This introduces the dynamic of a practitioner who is ignorant in some topic, standing beside another practitioner who happens to be the world's expert. A hospital or a business cannot operate on the limited availability of a few world experts. Competence must be widespread in order for the organization to effectively function.

Secondly, ignorance represents a performance gap more than just a knowledge gap: A work practices orientation observes what members of an organization actually do – and therefore also should notice what they what don't do. This is a behavioral attitude which goes beyond just knowing, reflecting an interest in action. In work situations, people always have background social practices which serve as default actions.[34] A natural instinct may be to act counterproductively or productively, or not to act at all. Organizational competence development should encourage learned social practices so that "the right thing to do" is natural for every individual within the work group.

The explicit recognition of ignorance within an organization can open the door for a new shared image of competences.[35] Like the practice of medicine, business is a human endeavor. People must acknowledge that human systems do fail, but that they also recover and learn through their mistakes. The development of organizational competences must rise to the challenges of ignorance.

Known Unknowns are gaps where competence development is clearly motivated

Known unknowns are the "easiest" type of ignorance to deal with, because they are the most straightforward. It is easy to justify competence development in areas were the organization is recognized to be weak.

Market sizing is a commonly known unknown. Without a mystical crystal ball that clearly foretells the future, the best that an organization can do is to consult with "experts" who provide judgements on next year's demand. An expert may rely on intuition, statistical analysis or privileged access to key decision-makers who lead the marketplace. No two experts are likely to produce exactly the same estimate, and an expert with a "good track record" may still falter at any given time. The organization still needs to act on a forecast. The mistake is to take that estimate as a truth, and then be surprised when reality reveals itself as a variance from that.

A known unknown presents itself as a deficiency in a current organizational competence
Known unknowns are situational deficiencies. In some cases, benefits are so clear that the organization doesn't think twice about allocating resources to resolve the deficiency. In the market sizing example above, the costs of market research and organizational sensemaking

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[34] Background social practices are described in Dreyfus (1990).
[35] A coherent image can be a powerful catalyzing device. See Boulding (1956).

activities are weighed against the benefits of "knowing better". The organizational competence to size markets can be improved to provide greater intelligence to the organization.

Known unknowns abound in business life. "Winners" in technology platforms may be sorted out either through industry standards work, or through allegiances that produce *de facto* domination in a marketplace. Design boutiques need to be fashion-forward with new styles in couturier apparel, and ahead of manufacturers in selecting colors for the next season of automobiles. The toy that every child wants for Christmas or the food that becomes a craze is predictable in its unpredictability. Although many in the movie business claim to know the formula for an Oscar-winning movie, they are surprised when audiences shun movies such as *Ishtar* or *Heaven's Gate.*

Known unknowns can be cleared with continued evolution of current competences
In the choice of organizational competences to be developed, it's often a simple matter of cost and benefit. Certain competences may be considered more "core" than others. Unusual or infrequently occurring circumstances may be handled by "stretching" current competences to cover an anomaly. Sometimes this handling is incorporated into normal practices. In other cases, the handling is may be effectively left as tacit to a skilled worker.

The immediate challenge with known unknowns, in the context of other types of ignorance, is that they may be too simple. Since they're obvious to everyone, they attract the attention of the most unimaginative. Incrementalism is easy. Greater benefits to embracing ignorance may be attained by attacking the more difficult types.

Passive ignorances includes e*rrors* and *unknown knowns* localized in competences

The passive ignorances of errors and unknown knowns can be described as "localized ignoring", because they don't represent generalized ignorance across an organization. An error is only an error if someone recognizes it. An unknown known is thus known to some, but not to others.

In many organizations, project failures represent a large body of errors. Every business conducts projects to varying degrees of success: some are completed on-time and on-budget; some eventually produce deliverables by overruns to plans; and some are abandoned before completion. In some cases, the error may be traced to mismanagement by project leaders, but in many others, the root cause may be traced to factors external to the project itself. A business can face this ignorance in one of two ways: "shoot the messenger" that bears bad news, or try to learn from the failures so that that are not repeated.

Unexploited proprietary knowledge is an example of an unknown known. Research divisions of companies are often great stores of discoveries, but ways to exploit the discoveries have not been figured out. A popular story is the improvement of acrylate adhesives at 3M.[36] Spence Silver

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[36] See the story of Art Fry, and the invention of Post-It Notes at
http://www.3m.com/about3M/pioneers/fry.jhtml .

discovered a glue that was sticky, but not sufficiently sticky to create a lasting bond. Art Fry applied the technology in the invention of Post-It Notes, to solve the problem of bookmarks falling out of his hymn book. The technology was known to the organization, but its commercial application was unknown.

Exploiting errors and unknown knowns leverages known competences elsewhere
Overcoming the challenge of passive ignorance is generally a bridging problem. One function in the organization has some knowledge or expertise, while another has a need. If each side is recognized as a resource, simple matchmaking will produce success.

Errors are a social construction, because for someone to be in error, another person must know that her or she is in error. An example is a revision to a documented procedure that has not been captured, but everyone in practice follows. When someone new comes onto a job, he or she will initially tend to follow the instruction manual, and will then follow an error. On a situational basis, a more experienced team member will correct the novice in practice. A more systemic correction would be to fix the error in the documentation.

Unknown knowns represent knowledge that is tacit within the organization that is not recognized as a standard way to deal with a situation. In most situations, practitioners are able to plan ahead, and bring appropriate tools and resources to a task. When an unexpected situation arises, a creative individual with strong improvisation skills may be able to fashion a MacGyverism[37] using materials at hand, possibly in an unconventional way. This creativity may lead to completely different ways to approach an organizational practice, as a cheaper, faster or better way.

Ignoring can be overcome through self-reflection, criticism, review and cross-functional competence sharing
Ignoring is a problem that is described in organizations as "silo" or "stove-pipe" forms. Communications flow poorly across functions in different formal organizational divisions. When communities of practice become too insular, they don't get the benefits of learning from others outside of their group. They're not against evolving their competences. They're just missing the perspective that someone with a different set of expertise and experience would bring.

Restricting the exchange of information to only others in the same organization would also be a mistake. People are members of many external communities, and draw from their experiences there. Participants in professional organizations, alumni networks, church groups and artist communities can all contribute different perspectives to organizational competences.

**Unknown unknowns* test the ability of competences to handle surprises*

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[37] A description of the MacGyver television show is at http://rdanderson.com/macgyver/macgyver.htm . "A clever fellow, he often slipped past the enemy's defenses and undermined their foul plans with ingenuity rather than brute force, using tidbits of scientific knowledge and ordinary items that happened to be laying around; for example, the paper clip might be used to short-circuit a nuclear missile, the candy bar to stop an acid leak, or a cold capsule to ignite a makeshift bomb, all just in the nick of time".

Anticipating Organizational Competences through the Disclosing of Ignorance

Unknown unknowns represent organizational blind spots. Even though they are all around us, we don't perceive them. There is no way to prioritize which unknowns are most pressing, because the unknowns haven't been identified. If they had been identified, then they would be known unknowns. They differ from the ignored categories of errors and known unknowns of which at least some in the organization have some ideas or experiences. Unknown unknowns may represent known unknowns to other organizations, or they may represent unknowables to everyone. They may be blind spots because of the way knowledge is generally classified.

One source of unknown unknowns is categorizations in mental models. An unknown becomes a problem when it can be categorized. When an unknown can't be categorized, it can cause discomfort to our understanding of the world. The classification of animals seemed straightforward until the duck-billed platypus was revealed to have some features attributed to mammals as well as features attributed to reptiles. The platypus doesn't have a problem with itself. For decades, biologists had a problem classifying the animal. The resolution required not only creating a separate classification for the platypus, but also adjusting all of the other classifications to make room for the anomaly.

A business example of the emergence of unknown unknowns was represented in the trends towards convergence of telecommunications, media and information technologies, in the context of co-opetition. In the mid- twentieth century, a conventional classification of companies would have separated media providers (e.g. Time-Life magazines, CBS national television broadcasting) from telephone and cable television providers (e.g. AT&T offered a national service, cable television was local to communities [38]) from information technology providers (e.g. IBM computers, American Online bulletin boards). The combination of digital technologies and the Internet has transcended those classifications. The distinctions between content, transmission and form became blurred. Strategic partnerships were formed and then collapsed, companies merged and then divested, new entrants emerged and withdrew. Co-opetition meant that an organization could be a friend in one situation, and a competitor in another.[39] The key competence that would put an organization into market leadership or the spark that would result in customers rallying around an offering was an unknown unknown.

Unknown unknowns test the robustness and flexibility of organizational competences
Unknown unknowns may be related to chaos, and to complexity. In a chaotic environment, turbulence is so great that a random path may be as effective as a pursuit in any direction that will be buffeted to a different course. In a complex environment, there may be a linkage between an organization's actions and a final result, but the linkage may be governed by a non-linear relationship with both understandable and unforeseen co-contributors.

Large scale world issues in the background of our daily lives may be at the root of minor unknown unknowns that manifest in major challenges. Political upheavals and military skirmishes can cause

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[38] For more on the history of cable television, see http://www.cablecenter.org/history/index.cfm .

[39] The term "co-opetition" was brought to popularity by Adam Brandenburger and Barry Nalebuff. See http://mayet.som.yale.edu/coopetition .

minor shifts in the flow of commerce that ripples through to global changes in supply and demand. Small temperature variations due to shifts in prevailing winds can upset ecologies so that customer demand unexpectedly rises or drops, deliveries of raw materials are interrupted or employees are unable to report to work. In some cases, one event can be clearly identified as the root cause in a chain of circumstances that lead to a major disruption. In other cases, a number of contributors mix together in a complex combination into a final result is that is considered to be a freak. Business people who focus on the "here and now" may be oblivious as the unknown unknowns become opportunities or threats.

Unknown unknowns can't be fought, but must be embraced in competence development
Can an organization really prepare itself for unknown unknowns? Logically, it cannot. It can, however, become more fluid in its ability to adapt to change. Diversity in competences affords an organization more options from which it can choose a response. A wide variety of skills, tools and infrastructures supports finding alternatives when the normal way of doing things fails. The best that an organization can do may be to hope that an unknown unknown is transformed into a known unknown before it emerges as an unrecoverable threat to the organization. The speed at which an organization can do this may be critical to its survival. The direction of change required can not be ascertained in advance, but an organization that has survived major disruptions in the past may possess the resiliency to survive it again.

The breadth of organizational competences to be maintained represents a trade-off between efficiency and adaptability. One exercise that organizations find helpful in broadening their perspectives is scenario planning. In scenarios as simple as two-way combinations of plausible trends, business executives are often able to detect blind spots which they had previously not considered[40]. Typically, they discover that the organization is well-positioned to handle small variations from the norm, but is unprepared for feasible but unlikely conditions. Accepting the idea that blind spots exist is an acceptance of ignorance.

Perhaps the pursuit of unknown unknowns should not be perceived a pursuit of better answers, but instead a pursuit of better questions. Answers are solutions to or resolutions of problems that we understand. The world that we don't understand requires that we shake the classifications that we've developed over time, and examine their validity. Looking inwards will produce fewer insights than looking outwards. A spirit of inquiry and openness orients us to perceive our blind spots.

Nonlinear approaches may be an appropriate path for nonlinear challenges. Art may provide a different lens through which discovery may emerge. R.G. Collingwood sees a different sensitivity in art:

> Art … must be prophetic. The artist must prophesy not in the sense that he foretells things to come, but in the sense that he tells his audience, at risk of their displeasure, the secrets of their own hearts. The reason why they need him is that no community altogether knows its own

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[40] For an expansive view of the value of scenarios, see Ogilvy (2002).

heart; and by failing in this knowledge a community deceives itself on the one subject concerning which ignorance means death.[41]

Similar, Gregory Bateson argued that purposive rationality that does not draw on the potential of the unconscious is pathogenic.[42] Art, religion and dreams could unlock greater insight well beyond the short arcs related to conscious human purpose. Creativity can bring seeds to possible innovation.

Active ignorances are "the ignored" *taboos* and *denials* of alternative competences

The three types of ignorance reviewed above exist in every organization. The fourth type of ignorance – "the ignored" – is not just a problem of existence. Taboos and denials are actively defended through organizational norms and protocols that reinforce their strength. They are dangerous because they represent mistaken knowledge in the worst way. They can not be overcome merely by exposing them. Taboos and denials are a common foundation for the identity of a group. Attacking "the ignored" may be perceived as an attack on the group itself.

Organizational culture is sometimes a taboo. Entrepreneurs are conventionally considered to belong to a distinct personality type. They have big dreams, take big risks, and possess the tenacity to suffer through many failures before hitting a jackpot. With a group of like-minded individuals, entrepreneurs can create a business empire in a space where no market opportunity was previously seen. They can build a great company. As the company matures, however, the appropriateness of their roles in leadership can become a taboo. The unbounded thinking that fuels a steep trajectory of growth bristles when organizational controls are suggested. Details about accounting principles, manufacturing quality and robust business processes are needed, but overlooked. Suggestions that a charismatic leader should give way to a bean-counter are derided. The organization is unwilling to even discuss the possibility that the competences that served as the foundation for its success are not the competences that will fuel its success in the future.

Speculative bubbles are the result of denial. In the dot-com craze at the beginning of the twenty-first century, the valuation of stock prices was clearly out of alignment with earnings expectations. Financial analysts clearly understood that market capitalization is the discounted stream of cash flows expected into the future. In contrast to the unwillingness to discuss a taboo, this timing of a crash was openly discussed in newspapers and even in casual conversations. Companies relying on the funding driven by the bubble continued to spend at high "burn rates" in the hope that time-to-market would result in pre-emptive market capture. Leaders of the start-up companies denied that venture capital would dry up before their product could establish a steady revenue stream.

The ignored of taboos and denials reflect an arrogance on the "best" competences
The steps from facility to proficiency to arrogance are small. A satisfactory level of organizational competence is attained when facility on critical activities is repeatedly demonstrated. Facility

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[41] See Collingwood (1938), p. 336.
[42] See Bateson (1972), p. 146.

means that slip-ups are rare, and a reasonable level of quality may be expected unless a worker is inattentive. Proficiency means that the organization can exercise its competences without effort. Tools are ready-at-hand, procedures are performed as second nature, and work flows fluidly. Beyond proficiency, though, is arrogance. When an organization recognizes itself as being the "best" at what it does, it may lose touch with others who have similar competences. The arrogant organization may not be interested in listening to the experiences of others, because it thinks that it's beyond that level of learning. Worse yet, other organizations who may have found a more promising approach or alternative path to greater competence may get distracted by the "leader", and abandon the chance of distinction by following the "conventional wisdom". Thus, all organizations converge on the same path, and potential bypasses and shortcuts become "the ignored".

Taboos are dangerous, polluting or forbidden subjects. In an organizational context, they can be portrayed as dysfunctional activities or distinctions that long-time practitioners have tried, and found to be wasteful or counterproductive. They tend to be reinforced through "war stories" of experiences with tragic endings. Over time, the contexts in which the taboos developed are eroded away. A rule of thumb of "when you are in situation X, don't do Y" becomes "don't do Y". Reproduction of the taboos can be either reinforced or mitigated by the attitudes of experts. Experts that are not open to discuss "why" and "how" things are done implicitly bury taboos even deeper in the psyche. An expert who "breaks his own rules" should be watched as someone who challenges his own thinking, and has the humility to understand that practices are not always the same as procedures written down in a book.

Denials are realities that should be obvious within an organization, yet are not subjects for discussion or action. In organizational competences, a work group may deny that their practices are not meeting the standards required, or not contributing to the overall success of an enterprise. It's always possible to find another reason, or craft alternative logic to shift the focus somewhere else. Few people enjoy the prospect of being the bearer of bad news. They may be portrayed as bringers of negative energy, or "wild ducks" in an environment where "team players" are honored. Until the reality is revealed and accepted, however, action cannot be taken.

Overcoming the ignored requires listening to alternative voices with credibility
Exposing a taboo can shake the very identity of an organization. Exposing a denial moves individuals out of their comfort zones. Resistance to the bright lights of a different reality may invoke emotional impulses such as anger and frustration. These turbulences may be the result of allowing a culture of taboos and denials to accumulate, so that "new news" is a shock to the organization. Taboos and denials are part of organizational life, and can be handled on an ongoing basis so that changes are more gradual.

Anticipating Organizational Competences through the Disclosing of Ignorance

One approach to revisiting principles that are core to an organization is the "credo challenge" at Johnson & Johnson. [43] The credo prioritizes Johnson & Johnson's stakeholders: firstly customers, secondly employees, thirdly communities and fourthly stockholders. [44] This clear prioritization was described as instrumental in enabling Johnson & Johnson to act quickly and decisively during the Tylenol crises of 1982 and 1986. The credo itself is not seen as a taboo. The potential impact of reordering the stakeholders and reworking responsibilities is an activity that follows a periodic schedule. This openness ensures that the credo remains relevant and vital.

Another activity that may be helpful is benchmarking: participation in industry or cross-industry studies to compare how practices are conducted by other companies. This provides an opportunity to view organizational competences from alternative points of view. The value in the benchmarking study should not be the summary of who is "best" in which competences, however, but understanding in detail alternative ways of approaching similar situations. An organization with a reputation as a leader may have been "leapfrogged" at any point in time, and a formal study affords the opportunity to revisit "the ignored".

Ignorance may be disclosed through self-discovery, or by customers and competitors

Ignorance within an organization does not necessarily imply ignorance by those outside the organization. Individuals and communities outside the organizational microcosm may see different opportunities and threats. Embracing external points of view provides opportunities for an organization to test the feasibility and viability of emerging new worlds that require the further development of current competences, or the seeking out of innovative new practices. These external viewpoints are omnipresent. The issue is whether the organization does or does not pay attention to them.

Customers are more than happy to disclose ignorances to their suppliers. These may be produced reactively as complaints, or may come in the form of suggestions. The organization may treat these inputs as annoyances, or as opportunities for discovery. In the postmodern challenge of customer loyalty, it is so easy for a customer to switch allegiances to an alternative long-term supplier. Providing feedback to a long-term supplier takes effort. The content provided by a customer may be on deficiencies in current products and/or services, or unfilled needs that could represent a real business opportunity. If an organization does not respond positively to these communications, both complimentary and corrective, customers will cease to make the effort to produce significant contributions. The organization can make itself more accessible through the publication of e-mail address and toll-free telephone numbers, but customers can tell when their comments are making a difference, and when they are just receiving lip service.

A motivating source of disclosed ignorance is competitors. An aggressive competitor will be happy to take over your share of the market. It not only recognizes an ignorance, but capitalizes

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[43] The credo challenge was described by James Burke, former CEO of Johnson & Johnson, at a class at the IBM Advanced Business Institute. History of the credo is available at http://www.jnj.com/our_company/our_credo_history/index.htm.

[44] See the current version of the credo at http://www.jnj.com/our_company/our_credo/index.htm.

on it. The organization under attack needs to get over its wounded pride and to positively embrace ignorance. Delaying a response to ignorance disclosed by a competitor is denial. If the organization is a market leader, it may have a small window in which to respond in order to preserve its leadership. Rapid response does not, however, emerge from nothing. Responsiveness comes from an underlying robustness in the form of an appropriate diversity of latent competences, from which promising new practices can be selected and rapidly developed. The reductive organization that does not allow for such "slack" may be caught "flat footed" when the industry shifts in a new and unexpected direction.

An active, but often discouraged source of revealed ignorances comes from within the organization itself. Innovation is unlikely to emerge from the core of a community of practice, but more likely from those at the periphery. Community leaders may see themselves as gatekeepers, "blessing" certain competences as "best practices" and lauding them as exemplars. This is a narrow view of organizational competences. Practices are situated. There is no one "best" tool for all jobs, and community members should not be rewarding for applying the wrong skills to a situation. Certainly, there are benefits associated with uniformity, such as economies of scale and measurable progress on product/service quality. An overly reductive view of practices can, however, lead to an increasingly mechanistic view of the organization. No human being likes to feel that he or she can easily be completely substituted by a co-worker, just as a cog or wheel in a clock is replaced.

The challenge of accepting other ignorance disclosers may require the rethinking of "enemies" as potential contributors. Forestry companies may see environmentalists as enemies, or they can embrace them to channel their energies into a shared positive force. This is a way suggested by C. West Churchman in "The Systems Approach and Its Enemies". Enemies continually challenge current organizational thinking, and can point out blind spots. Co-opting enemies also reflects a strategy to "keep your friends close, but your enemies closer".[45]

MEMBERS OF ORGANIZATIONAL COMMUNITIES EMBRACE IGNORANCE AT VARYING LEVELS OF ACCOMMODATION

Approaching organizational competences from the perspective of the ignorances described above can provide an energizing focus, with a potential for unobvious paths and potential benefits. They can be a route to "anticipate and pre-empt" customers through the development of competences that support their future interests, as well as current interests. An organizational ignorance quest can challenge the enterprise or venture to be designed for adaptiveness, rather than maximal efficiency for current stakeholders. To be consistent with the practices orientation, however, merely pointing out ignorances is not enough. The disclosing of an alternative worldview needs to be sufficiently significant so that individuals will alter their practices as a fundamental level. The challenge for management is that all members within a community do not simultaneously adopt new

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[45] Mario Puzo wrote this "keep your enemies closer" line for Don Corleone, in *The Godfather* (1969).

practices. Varying rates of diffusion in embracing ignorances appropriately altered behavior need to be accommodated.

Countering ignorance at the organizational level requires addressing ignorance at a personal level, individual by individual. The development of organizational competences follows an evolutionary path, based in learning and experience. At the personal level, the learning cycle is described by Robert Dilts in terms of consciousness and competence:

> Experiential learning tends to occur in a cycle but involves several key phases. Competence comes from "piling up" reference experiences through doing and acting. Conscious awareness comes from having cognitive maps and distinctions with which to label and "understand" behaviors and experiences. According to conventional wisdom, the basic process of acquiring new skills involves a cycle composed of the following phases:
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> 1. Unconscious Incompetence -- Learner does not have enough knowledge or experience to either understand or apply a principle or skill (but does not necessarily know he does not have the ability to understand or apply).
>
> 2. Conscious Incompetence -- Learner has enough knowledge and/or experience to realize that he or she is not able to understand nor apply a principle or skill (or believes he or she cannot understand nor apply the principle or skill).
>
> 3. Conscious Competence -- Learner has reached the threshold of knowledge necessary to understand and communicate about a principle or skill (but does not necessarily have the threshold of experience required to consistently apply or enact the principle or skill).
>
> 4. Unconscious Competence -- Learner has reached the threshold of experience necessary to consistently apply or enact a principle or skill (but does not necessarily have the threshold of knowledge required to understand and communicate about the principle or skill).
>
> 5. Mastery -- Learner has reached the threshold of experience and knowledge necessary to consistently apply or enact a principle or skill as well as to understand and communicate about the principle or skill.[46]

The possibility of ignorance places the unconsciously competent person into a new world where he or she may be disclosed as unconsciously incompetent. The individual may continue to espouse that his or her world view is more "correct", but will have to acknowledge the existence of the new world in order to maintain membership in the social group. An individually who falsely sees himself or herself as a master may deny the new world as an aberration or impossibility. A wise master will have the breadth of experience to recognize a new world and operate at a consciously competent level. This presents challenges to identity, and requires an attitude of humility.

Acceptance of ignorance at the organizational level may not only be difficult, but contrary to human nature. In business life, competence is normally framed as certainty and rationality. Embracing

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[46] This concise description is available at Dilts (2000), p. 623. It is also available at http://nlpuniversitypress.com/html/L45.html .

uncertainty and intuition may be difficult for some to accept. Organizational competence development may need to overcome the taboo of ignorance, itself.

Experiments demonstrate that human beings do not respond with consistent rationality when confronted with choices under uncertainty. With prospect theory, Amos Tversky and Danny Kahneman show that "losses loom larger than gains", and framing choices in different ways may result in inconsistent choices.

> It is often possible to frame a given decision problem in more than one way. Alternative frames for a decision problem may be compared to alternative perspectives on a visual scene. Veridical perception requires that the perceived relative height of two neighboring mountains, say, should not reverse with changes of vantage point. Similarly, rational choice requires that the preference between options should not reverse with changes in frame. Because of the imperfection of human perception and decision, however, changes of perspective often reverse the relative apparent size of objects and the relative desirability of options.

> We have obtained systematic reversals of preferences by variations in the framing of acts, contingencies, or outcomes. These effects have been observed in a variety of problems and in the choices of different groups of respondents.[47]

Thus, the framing of ignorance as a positive rather than a negative can make a difference in organizational attitudes. Organizational ignorance is not an antithesis to organizational competence, but something to be embraced and welcomed. It is part of a world that some may see, that may be uncovered for others.

A rationalist may look for a measure so that he can justify the pursuit of ignorance. The ideal might be framed as a new kind of ROI: Return on Ignorance. Dealing with ignorance is not that easy, however. Steve Haeckel provides an alternative view for managing based on principles, rather than managing based on metrics.

> A good case can be made that if you can't measure something, you MUST manage it. People manage their lives without being able to measure most of it. Intuitive decision-making plays a large role in the kind of improvisations necessary to deal with the unanticipated.[48]

Embracing ignorance requires courage and humility. Business organizations are generally considered to act rationally, and thus do not seek risks with incommensurate rewards. The human beings that inhabit organizations are naturally risk averse. An organization that denies ignorance is one that denies the outside world.

The statement "ignorance is bliss" can now be reinterpreted in two ways. Ignorance can be bliss for the arrogant organization that believes that its competences are so superior that it can handle any situation that will ever come its way. Alternatively, ignorance can be bliss for the humble

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[47] Tversky & Kahneman (1981), p. 453.
[48] Private communication with Steve Haeckel, captured in e-mail, February 25, 2002.

organization that accepts that it is not omnipotent, and channels its energies towards disclosing new worlds that will lead to success in the future.

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