Commerce Futures: Enriching the Art of the Possible

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Through the ages, man has designed and employed artifacts that amplify individual and community capabilities and systems that foster cooperation to mutual benefit. Whether for the individual, interaction among a few or to benefit a market/society, man has developed practice and synergies to leverage the physical, behavioral and cognitive capacities.

Commerce has been an essential part of life and society and has done much to influence skill development, patterns of cooperation and evolution of community. Our lives are oft driven by the attainment of skills, cognitive capabilities and the exercise and demonstration of capabilities. We employ systems to create effects that are valued by society – efficiency, necessity and satisfaction.

Steve Jobs often talked about the study in Scientific American that addressed the efficiency of locomotion of species, identifying the condor and the most energy efficient, and man was much lower in the spectrum. Steve also noted that the study showed that a man on a bicycle was far more efficient than the condor. Jobs often cited this for his reference as computers being the “bicycles of the mind.” It has been the quest of our last century to build these amplifiers of man that augment our capabilities – physical and mental. However, our world has evolved far more than appendages and personal amplifiers. These technology-enriched environments have an evolutionary path that transcend human evolution and increasingly contribute to the disruption of societal norms and commerce practice. It is of this that I wish to address.

The changes in our life and society during our lifetime are numerous and accelerating. We enjoy a third more lifespan that that of our great-grandparents and at the same time are confronted with change happening ten times faster than they encountered. It is little wonder that individuals, even industries resist, and often fail to accommodate the changes that inevitably transform their existence.

While asked to address the issues in evolution of digital commerce, I want to resist the temptation to maintain and amplify the separation of the forms and means of commerce. Indeed, for one who has spent a lifetime in exploring the substitution of bits for atoms, I find myself in pursuit of seeking standards for a commerce based on selling rights to “print” atoms – whereby instead of selling an artifact, I sell the permission to create that artifact. Advances in 3D printing and rendering the “real” are an important instance of a component of future commerce. In space, the loss of a tool might be followed by a simple rendering of it’s replacement. Indeed, today I
may employ my own stem cells to “print” a needed organ with no fear of rejection or question of ability to return to proper function.

Questions that Matter

My challenge to the community of systems researchers is to stay relevant to the emerging and future markets of systems and tools that serve commerce and society. We need be willing to ask “big” questions and propose solutions that “matter”. We have it in our capacity and have it in our history, yet I am often concerned that it is not in our current practice. We need be more than historians and recorders of the near term and more than the micro advancement of normal science. Fast futures require bold inquiry into the possibilities and strong assertions of the viable.

Those who know me know that I am about science, but more so about creativity, imagination and design. I am concerned when we become pre-occupied with looking out the side window or through the rear-view mirror. One can drive at very low speeds, say 10 miles and hour, mainly viewing the side and rear view – the large windshield only slowly changes. At speeds of 75 miles an hour the rear-view mirror poorly informs where you are going. At 120 miles and hour and beyond, the rear-view mirror has little relevance and the broad windshield view better informs our decisions.

Speaking Near and Seeking Far

It would be cowardice to inveigh on the limitations of current inquiries without asserting the bold opportunities of promise for the future of commerce. My students are called SOBs (Students of Benn). SOBs are trained to challenge all assumptions and assertions that govern a current practice and determine the nexus of change that can make a significant positive difference. We look and act against the near term needs, but think and design to aspirational long-term possibilities.

The near term is always a safe pursuit – our rich potpourri continues:
- Cloud migration to public and private venues continue and questions of inter-cloud exchange, security, integrity, identity and rights still serve near term pursuits
- The ecology of apps and the engagement of what I call the “small and the many” encourage a new age of software development, mashup, remix and syndication
- Sensors everywhere transform our ability to know what is happening, and do something to increase control – not only understanding, but influence in a sensor rich society
- Analytics encourage new capabilities for enrichment of decision processes with growing volumes of structured and unstructured information – recalling my old references to information refineries
- A little bit of intelligence goes a long way as we renew our ever quest in making things more aware of their environment and circumstance
Developing new forms of community for social good, personal development and for service to enterprise will remain a pursuit for several years to come – needed social media implications studies remain.

Redefining the enterprise and transforming the portfolio of skills and capabilities are, and will remain, a fruitful venue.

The sourcing of capabilities, historically an IT organization responsibility, changes from development to integration and shifts from CapEx to OpEx with significant implications to evolution of the operating platform.

These, and many others, identify the kind of “normal science” that is worthy of our attention pursuit and development of individuals – but not our highest calling.

I tell my students (SOBs) that in our volatile arena of technology, acceleration is more important than velocity. Most studies in technology and application look at change. We are more interested in how “change is changing”. With the volume and velocity of change taking place in our markets, it is most important to have an appreciation of the direction of present and future changes in a technology or system capability or market practice.

It is thus incumbent in our inquiries to inform current investment in systems against current expectations and future effects. A diminishing portion of the systems we employ in the enterprise and the market are sourced and developed as in-house assets. Rather the enterprise is ever more the employer of systems that may increasingly influence the shape and practice of the enterprise, rather than building conforming systems that tend to ossify aging business rules in a volatile commerce arena. It is difficult to say which offers the more agility. Properly pursued, the agile enterprise will welcome the agile, continuous systems integration – ever shaping the systems to the ever-shaping strategic shifts of the markets.

**How Then Shall We Lead?**

Even our small questions should be housed in big questions. Big questions are not new and most have been there from the beginning, maybe with less immediate relevancy. Let me offer five items to illustrate:

1) How do we reduce the cognitive load for users of systems? Thought to action has gone through significant forms of articulation through the years – from typed character to cursor pointer to vocalization and gesture. The challenge is the reduction of the burden of articulating thought into viable response and action. Gesture-based navigation has been realized and voiced exchange and intelligence are maturing. How we think, when the old buffers (safety) decline and how we temper emotions when response is more immediate - are no small questions. Few would defend the design of yesterday’s or today’s user interface as the systems become more a partner and extension of self, rather than “encountered entity”.
2) What might be whole new forms of commerce? In the evolution of our digital commerce practice we pursue the reduction of “friction” in commerce. How buyers find sellers; and sellers find buyers; describe and compare offerings; match and select; discover price or value exchange; agree and resolve terms; settlement; resolve dispute, … Through the years, technologies have been employed to facilitate in reduction or elimination of costs or tensions. How might commerce venues operate twenty years hence? Rather than “speeding up the mess” – what might be wholly different? For example, purchasing a repair part might be attaining a license to “print” the part from an open source or proprietary library if description. Every aspect of these “mechanisms of the market” might be subject to radical transformation. Such lessons might have informed executives to avoid hazard had they been considered in industries like newspapers and news services, music and entertainment, financial transaction service industries, and others.

3) What happens when the passive becomes active - when stuff matters? It has been some time since the volume of things on the internet far out-numbered the numbers of persons. Still our occupation lies with people-facing systems. Important and neglected venues of vocal, thinking and interacting devices and applications are upon us. Technologies like, RFID, sensors, motes and smart dust provide identity, sensibility, memory, intelligence and communication to things that have been historically passive participants in commerce. Indeed, there may be far more interesting implications for commerce than in the occupation on people-edged systems. Much work is needed here for evolving environments and social norms that are not people-centered and related to a society of man, systems and machine.

4) How will we leverage the virtual – the rendered and the real? Democratic access to ubiquitous communication was followed by democratic content as social media gave voice to those that previously had only institutional content to consume. This has been our occupation of late – shaping these emerging patterns of content creation and sharing. New architectures (mostly publish-and-subscribe) dominate these platform evolutions. Immersion technologies, augmented reality and virtual worlds offer rich means of engagement and participation that will lead to a blurring of those things real and those things rendered. New possibilities arise that challenge our assumptions of geography, nature, proximity, experience and sensory perception.

5) What will be the engines of commerce in the future? Few would doubt that the terms “corporation” and “enterprise” are artifacts of the earlier century. Where one company ends and another begins is becoming more difficult to ascertain. One might speculate that the 21st century will foster new forms of enterprise that will be likely either monolithic, quasi-governmental social/commercial/political platforms or one of numerous fragmented, highly-adaptive, opportunistic entities that align and depart from venture arrangements. Whatever might be the “organization” of that future, our inquiries need go well beyond the current bias of organization studies that are most wholly behavioral and people-centered. Systems and technology have always been the “missing half” of studies of enterprise futures. The enterprise of the
21st century should not be defined by its people-centered identity, rather by the mission, purpose, service, stakeholder reward and social responsibility. At the risk of overstating the case for dramatic effect – the commerce organization of the 21st century will be less homo-chauvinistic. Singularity aside, systems emerge as at-least equal players in the design of future society and future commerce.

We might go on in enumeration of simple and radical commerce possibilities. We might ask ourselves - what changes in commerce when . . .?
- We may track an object from the second it is created until the second it is destroyed
- Things sense, feel, remember, think and speak about condition and circumstance
- Objects talk and blog (blogjects) they publish to those willing to subscribe
- Ownership is a condition not of possession, but negotiated as terms and conditions of exchange and is fluid and independent of normal conditions
- Humans have rich immersive experience that defies rational exchange and encounters of full engagement that are not now possible
- Diverse systems of independent development cooperate to serve in ways that were only possible with large monolithic systems of the past – ERP, CRM, WMS, etc.
- Commerce interactions are based on authentication and attestation – humans, systems and devices all need to assert their identity and their rights and authorities
- The boundary between the real and the rendered is less relevant and the hybrid mix makes new things possible

Why I will Miss Steve Jobs

Let me close with a brief comment on the power of influence that we have in our technologies capability to make new things possible. We have lately lost a key catalyst for innovation in the loss of Steve Jobs. While many celebrate the things that Steve and Apple did in products and services that have transformed many industries, I celebrate what he “caused” to happen and lead others to do in their innovation. The impact of what he did is far overshadowed by what he led others to do. Our industry progress would more resemble attrition warfare of World War I (as it was in the 1970s and 1980s) were it not for folks like Steve Jobs that defied convention and challenged whole market practice. We need more of them.

Steve once said, “Everything that is around you that you call life was made up by people that were no smarter than you - and you can change it, you can influence it, you can build your own things that other people can use ... Once you learn that, you'll never be the same.”

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