

Forum

The Future of Museums

ABSTRACT

This informal essay explores the changes natural history and science museums may encounter as their purpose, foundation, and patronage evolve from this historical era to the next.

The historical circumstances – scientific, social, and economic – that brought forth the great museums of the world no longer exist. In their place is a new public context that shifts attention from museums whose business is objects to organizations whose business is information. At the same time, the economic-survival mechanism of museums is shifting from grand philanthropy to innovative development programs and market-sensitive commercial endeavors. Meeting the needs of the next generations of visitors and cultivating the next generation of funders will not be simple. Massive changes in the social fabric of the nation will soon demand new kinds of institutions that play new roles in society. Museums that meet this challenge will not simply be competing with other sectors of society for public attention and funds. Future success will require the fundamental reinvention of museums so that their purpose is obvious and their mission is clearly aligned with the needs of future generations.

This essay argues that science and natural history museums began their lives as city-states of knowledge, which contained sacred objects. These were displayed to the public and studied by the museum's researcher staff. The museums were funded by the largesse of the industrial revolution –

fortunes made in machines, mining, transportation, and trade. Philanthropy, science, and curatorial practices formed a social culture in the classic museums that was fortress-like. Today's world however is different. It is a world of extraordinary access to knowledge and information. The gates of the city-state have been thrown open. As a result, we are becoming an information-and-knowledge society, where what one group held is migrating ubiquitously, via communication and computing technology, without regard to borders, class, or age. In effect, we are in a municipality whose currency is information and access. This is a fundamentally different world, with different demands. It is a change in the landscape, from one characterized by oddities of culture and nature, to one characterized by the necessities of survival in the marketplace. The role of museums in the municipal and informational setting needs to be as central to society as it was when museums were among the only authorities for the public on such subjects, the purveyors of different worlds.

I. Knowledge City-states: Holders of Sacred Objects

The Industrial Revolution to the Space Age

There are vast differences between discovery and the history of discovery. Similarly, there are large differences between the history of discovery and the way discovery is presented to the public. Finally, there are large differences between what is presented to the public and what is routinely learned in schools and higher education. Thus, the food chain of knowledge proceeds slowly, if at all, down a fairly long path, from the practice of science specifically to its communication generally.

In the nineteenth century and earlier, museums sprang up, fueled by industrial, trade, transportation, and mineral fortunes, as testaments to the prowess of those who made astounding discoveries and as an antidote to public monotony. The intrepid explorer who went to the North Pole, or the

curious anthropologist who went off to New Guinea were oddities. They received news coverage and their bountiful collections ended up in museums where people, on Sunday afternoons, encountered and pondered displays of cultural artifacts and physical specimens. Presentations for the public were composed of the oddities of life or specimens of nature, coming from afar or generated through scientific pursuits. This was the evidence of things that stood out in stark contrast to a background of common sense and everyday life.

Great museums sprang up in the great cities around the world, fueled by donors who gave conspicuously, and whose good deeds were recognized socially and publicly. The legacies they left behind were portals into other cultures and into nature's wonders. The collections relating to humanity were meticulously groomed (and selectively interpreted) by representatives of an "advanced" society presenting the cultures of less-advanced societies to the public. They also presented the mysteries of the past, the archival evidence of how people lived before. In the physical and biological realms, the impetus was not so much a social dimension of demonstrating the superiority of life in the modern world of the big city, as it was the mastery of humans over their environment. The human ability to pry open nature's doors and peer inside the machines of the universe was, itself, a testament to the superiority of modern humans. To a certain extent, these facilities were castles to the accomplishments and celebrations of the superiority of the "more advanced" Western and urban settings.

But with the passage of time, and despite often widespread popularity, these monolithic museum organizations, and even the newer ones, are less sure of their position in society today. Today's museum audiences, according to one study, visit museums (as perhaps in the past) not to have

the limits of their knowledge challenged, but to confirm what they believe they already know about the physical and social worlds. Added to this current cultural circumstance is the fact that the "coin of the realm" in today's changing world is no longer physical objects, but digital information shared broadly, or knowledge collected globally. What does all this mean? It means that museum activities, in the past, were focused on physical objects and museum technologies were about methods of storing experience in physical ways. But the future is about information, not objects.

Hence, a traditional museum may display physical things (or store them in inaccessible collections) that its research staff may study and describe. These institutions were special in the past because of the stuff that belonged to the museum (the fortress of understanding). They were exclusive venues where the objects of awe were ever present. Large endowments facilitated this distinction. It could be said that only museum so-and-so has this or that collection. Possession was the object. Denial of access was what gave power to the institution. The spirit of social obligation – the public spiritedness – or the return on investment for the philanthropists, was that the public could commune, every so often, with the sacred objects and be enriched by the experience.

For the research staff, recording and cataloguing was also an activity of the privileged. Their archival activities involved storing and maintaining the physical objects and also making analogs, or representations of their collections. Hence, using analog or approximate technologies, they sketched, took pictures, made molds and audio recordings, put items on microfiche, and recorded on film (and later, on videotape and computer disks) what they had. The result of their research and archiving was the increased value of the city-state; it not only owned the objects exclusively,

it understood their value exclusively, it created their meaning exclusively, and maintained the exclusive ability to make reproductions of the objects.

As the twentieth century picked up speed, four critical things began to weaken the walls of the great museums, but by no means slowed down the passage of the public through their halls. That came much later. The four forces were: the democratization of travel, the mass production of cameras, the advent of radio and television, and the digital revolution. No longer were individuals completely locked out of the world of wonders. For the privileged, an air ticket to Africa, the South Pacific or Nepal was possible. The magic of photography could bring back a testament to the world of difference. *National Geographic Magazine* was a monthly museum, one without objects. Great inventions were written about in the press, and disseminated further through radio, and later, television broadcasts. The circle of information beyond the gates was widening. However, what these media did not have was the object, and the scholarly interpretation of the object or the phenomena that was present in museums. Museums alone, among public-minded institutions, had the staff and resources to make those interpretations, to draw the conclusions that they would then convey to the public. It was a one-way street. The museum created and owned the truth, and it controlled its availability to the public as it saw fit. There was no ecology of information, no cycling of knowledge, just a trickle or a waterfall, depending on the institution.

Now comes the digital revolution, with a peculiar and somewhat militaristic history. Here is the ability to catalogue and communicate about "stuff" that was proven on the modern battlefield, practiced in the missile commands, and was part of the superpowers' competition to go the moon. As the Cold War was finishing off the last battles of World War II, the value of science to the military establishment was no longer "a few good

men" under the bleachers in Chicago, turning stardust into weapons of mass destruction. Instead, the military, through the US government (and the Russian, British, French, Italian, Chinese governments) had cultivated science, scientists, and universities in order to have the edge in possible hot or cold wars. Science, by this time in history, was inseparable from national security. This was not the case when the wonderful museums grew up around the world. At that time, power was projected by ships and by military strategy that was classical, only improved by the quality of the implements. But in the modern era, science was everywhere, in all spheres of military competition.

The nature of the political/military competition drastically changed as we slipped from hot- to cold warfare. In cold warfare, incremental advantages, perceived or real, made all the difference. Going to the moon was worth a thousand bloody battles. Who could compete with the people who could send rockets to the moon, with people aboard who would step on its surface and communicate back to Earth from space in a live broadcast?

The victory in space cost no enemy lives. This bold act of discovery required no museums to present its magic to the public. Glued to television sets, an audience of millions witnessed humanity step onto truly foreign soil, while data streamed from the Earth's only natural satellite to the command center in Houston. We were all there and we never left our homes. Science teachers and their students had a field day – and stayed in the classroom.

But the Cold War always escalated the stakes associated with any scientific endeavor, because incremental advantages translated into success in the

war of perceptions. Harnessing US scientists in a unique and more time-efficient manner became a need. Now the battle plan was about shaving minutes and seconds off the acquisition of information and the conversion of information into useable knowledge. Certainly most Western governments, the USSR, and China subsidized a great amount of science, but accelerating the time necessary to reach conclusions was one of the incremental needs. It came about in the US and Europe through a communications network between researchers. Like the world of battlefield communication, a newer and faster method for information to be exchanged and analyzed provided inherent advantages.

Digital signals propagated by computers, sent across networks, and powered by electricity would change the nature of scientific communication, and in time, revolutionize information exchange and knowledge management in the corporate and public sectors. I refer, of course, to the Internet. This invention of the defense establishment was like a genie in a bottle. The public would never ride on a rocket ship or drive a tank, but they certainly could exchange information at nearly the speed of light.

Newspapers, radio, telephones, television, telexes, and mail were evidence of the world's heavy reliance on the conveyance of information for business and public pursuits. Yet in each case, the communications were mediated by a business and, with the exception of the telephones and the mail, this activity was regulated. In the media, messages traveled only one way, from the newspaper and broadcaster to the receiver in the home or office. Media and telecommunication were bifurcated. If you wanted to share a picture or a report, it went through the mail. If you wanted to tell someone something, you used the phone (two-way, voice only).

The digital revolution, coupled with telecommunications, changed all of that. It created a digitally distributed network that was two-way and reliable, because it did

not depend on analog signals, but computer code, which could be faithfully reconstructed by the receiver. If it worked for Uncle Sam on the Cold War battlefield or on a mission to the moon, it would work down home for shuttling other information. For businesses, it allowed a new market to arise, which was as old as the original marketplaces. Information consumers could be bred and would fuel the computer (digital) and the telecommunications (distributed) revolution into a fusion that would alter world balances—not among nations, but among individuals.

Without belaboring the point, the digitally distributed technologies are now driven, not by the military or scientists, but by the public. Computers, the World-Wide Web, digital phones, remote e-mail, infrared transfer from handheld devices to computers—all these things, for the first time in history, have put the power of communication, information gathering, and analysis in the hands of the individuals of the world. They now hold the future development of those technologies in their hands, because their purchases outstrip investment by governments, research facilities, and museums. Who best understands this? Investors, CEO's of some companies, think-tank inhabitants and, well... people under the age of twenty-five.

What are the implications for museums? Answer: It is now a new world, or soon will be. Nonetheless, the institutional dinosaurs still seem to be quite alive. No asteroid has obliterated their Earth. In fact, for many museums attendance is up significantly. In earlier years, many deeply feared that television, computers, and the Internet would wipe books off the face of the Earth. But the statistics speak for themselves. Book sales, book publishing, and mega-chain stores all rose at a rate not dissimilar to the growth in sales of electronic devices (such as computers, cell phones, and fax machines). Yet the Web is on its way to eclipsing bookstores as the place where people get reading material. Several conclusions can be drawn from all of this, some good for museums, some not so good.

It is great to get out of the house. And once you walk out of your domicile, there is great competition for your non-survival dollars. Amusement parks, the out-of-doors, \$100-million films, restaurants galore, and the malls are all eager to take your money. Walking into the air-conditioned world of a museum is one of your alternatives. For a country, and a world fully and firmly knowledgeable that education is the key to success, there is a perceived comfort inside the confines of a museum. Similarly, for those who want to have their imaginations tweaked about what we know about the world and the universe, here is something that is bigger than life — larger than a television, computer screen, book, or, in some cases, even a movie screen. Here our senses can be bathed in exhibits where we are the pixels, parading around an approximation of nature or culture.

There is something to be said for this larger-than-life experience. So the value proposition is no longer to examine how strange the world is, for that is amply available from television, CD-ROMs, science books and magazines. It is about a fuller body to the experience. It is not simply a stream of information, but immersion in something that approximates the phenomenon. It is physicality in an increasingly virtual world. Disney understood this a half-century ago, when it brought forth Disneyland in Anaheim — physicality was combined with classic children's stories. Neither knowledge nor truth, however, played a role.

Hence, museums are no longer knowledge city-states, holding the specialized knowledge available on display nowhere else on the planet, or tightly grasping specimens being interpreted *in situ* by a handful of lucky researchers. No. Today, an eight-year-old can logon to the Internet, use the World-Wide Web, and communicate directly with a paleontologist in the field. The same eight-year old child then has the freedom to develop his or her own conclusions about the life of a prehistoric creature, and

communicate those conclusions to teachers, parents, friends, and even back to the researcher in the field, who might get a new idea from communication with a naive eight-year-old on another continent.

The proposition of what is inside the gates has to be examined anew. In the last two decades that examination has been a selective adaptation to a changing environment. It has not, however, been an evolution into a new kind of beast. So, the ancient creature adapts to compete with the newer forms. Gift shops, interactive displays, CD-ROMs, books, traveling exhibits, and toys now bear the museum brand. Like so many spores, these branded objects migrate out of the museum and occupy the desks, shelves, and lives of people who are not in contact with the museum. Inside the walls, restaurants get better and more in number, competing as a food source with establishments on the outside and keeping people in the museum longer, so they might buy more things. Likewise, all of the institutions have gone online. Web sites abound carrying the logos of the institutions. At the same time, life-like, mechanistic exhibits, (e.g. rubber dinosaurs) built and funded by outside corporations, are traveling to museums, allowing the museum a false or incremental sense that it is competing with the theme-park venues for visitor attention.

While these beast-like institutions have, for now, avoided the tar pits and dodged the asteroids, they are seeking shelter in an environment increasingly more difficult to survive in. Uncertainty abounds. Two things are clear to museums: they need an ever-increasing flow of visitors and they need to raise ever-increasing amounts of money to pay for the ever-increasing operating costs of every aspect of their operations. The next decades do not bode well for museums. The grand endowments of the nineteenth century and the first half of the twentieth are dwindling. The sources of big-money funding have shifted west in the US from the public

spirited old money of the Eastern seaboard and the capitals of the Midwest to the nouveau riche digital and entertainment economies of the West Coast. There, and now everywhere, the spirit of giving is not so free. It is "results oriented." And with population growth, the dispersal of family fortunes is rapid. There simply is not going to be another hundred years of unbridled philanthropy for large city-state institutions.

Problem number two is of equal concern. While attendance is up and kids are streaming into museums with their parents, the fully digital children, the ones who are seven or seventeen and hunched over the computer screen like their professional parents, are not the same creatures as their elders. They are fully digital creatures. They receive information differently, they process it differently, and they think differently. They are information-processing beings. They are native speakers in the language of technology. That's not to say you won't see a child curling up with a book or wide-eyed in a museum, but these are customers (potential museumgoers) with a reality that, increasingly, is online. Online for them may be more real than the rest of life. Will their children be taken to museums?

Children today, raised in the digital-informational age, are primary speakers of the language of technology, the language that a generation ago took people to the moon, developed Star Wars, and catalyzed microscopic and universal discoveries. The world of discovery is now theirs. For museums to cater to this digital generation in an era when money is no longer flowing from industrial barons is going to be a real challenge. To get money from them or their cash-strapped parents will be even more difficult. My eight-year-old son loves museums. But when I asked him what could make a museum better, without hesitation he said, "*more of those interactive things.*"

II. Knowledge Municipalities: Objectifiers of Information

Global Survival in The Digital Era

The value of information and the roles of public museums will radically evolve to keep up with the demands and realities of new times. Simple competition on the fringes will not sustain the institutions of the future. In fact, the very notion of public institutions—social, cultural, investigative, financial, and environmental—is about to be questioned. New paradigms are waiting to be born in the confusion created by change from the object era to the information era.

Tearing down the city-state walls in favor of common survival is the ethos of the coming era. The historical city-states locked out not only their enemies, but also those who actively supported the city-state. When the gates were locked at night, the hard-working serf was prey to the vagaries of life. Once the walls came down and municipalities grew up in the shadow of the powerful fortress, safety became a common need, met with a common force. In the world of museums, when the demand was to present sacred objects, to better understand sacred objects, and to acquire more sacred objects, life was lived inside the walls. However, once information arises as the currency of such institutions, their purpose must change. No longer is the issue keeping a monarchy alive. It is now serving a common good. What could that good be?

When museums got their start, common survival in an era of instability and confusion was not an issue. Science was an engine for commerce, for solutions that simplified life, and for its own sake, to gather and compound knowledge. Solutions were designed to make life easier. The compounding of knowledge led to great universities and government-sponsored research. However, those successes contained in them a challenge to our collective well being. Issues of environment and education now abound — how we have spoiled our habitat, how our

population has grown unchecked, how poor our educational system has become. Likewise, what profound questions we have raised. Cloning humans, nuclear weapons in third world countries, controlling emotions with drugs, and many others questions, the clear results of science, are with us every day.

The roles scientific investigation and natural-history research play in the world may help shape the nature of the natural history and science museum in any given era. If nothing else, the great museums sold the public the results of science, they confirmed the scientific method and the value of rational thought and diligence, a perfect object lesson for the nineteenth century. Our object lessons today are far different. Rational thought has been put on computer chips and processing of information has been put in billions of hands in the form of computers and networks.

The result, however, still demands a clear social function from museums, whether they are anchoring a knowledge city-state or a knowledge municipality. The house of objects served as an anchor in society, a convenient way to let the public know that the changes in knowledge and geographical conquest that were occurring were wondrous and worthy. They set people at ease at the same time as they illuminated their lives. A world of oddities and objects was proof of the method employed to gather the stuff, analyze it, and present it. In short, they comforted us and lifted us up all at the same time.

Today, do we not equally need to be comforted and uplifted? Is the municipality any more certain of itself than the city-state? Is there something more durable about interpreting the abundance of information into manageable pieces than there was in taking scarce objects and placing them in the fortress? If so, the focus of the museum mission will change,

but its public purpose may stay the same. Although the world around us has changed, human needs are much the same.

The museum still has the ability to legitimize new methods and results in culture and science in the information era, as it did in the great days of discovery. In fact, its role may be more central to society than it once was. Making the public comfortable with and excited about remote Indonesia or abstract relativity theory may be no different, fundamentally, from making people comfortable with and excited about the culture of global information technology. New wonders (and horrors) for us to ponder and comprehend include the manipulation of the structures of life brought about by genetic engineering, and the threats to human health brought about by diminishing the planet's biodiversity. What is fundamentally different, however, are the methods of delivery, the nature of the service, and the level and kind of public involvement. Here the museum is an information hub, full of digital knowledge objects that can be distributed widely and can come with instructions on how to use them. Here, the museum is a great packager of knowledge, a building seedpods and dispersing them into the community.

The edifice has a place in the new world, but more as a factory than as a castle. Here the emphasis is more on the organization and management of information than on the edifice of an institution. This may be the hardest transformation to grapple. Going from a known locality, and a known staff, to a more fluid and ill-defined environment is tricky. Thinking that the age-old staff organization somehow has to be carefully maintained as change is managed is as foolish as thinking that all buggy makers would become automobile manufacturers. Organizations must reinvent themselves. In that mix, some of the personnel will lead the charge, others will adapt, and still others will need to move on. The smugness about the

Web site for a museum will slowly diminish as it transforms from a glorified publication to a fully realized new medium. As the digital world picks up credibility inside the hallowed halls, there will be a point when it is realized that the lifeblood of the new institution is the rate of information exchange, not the footprints on the marble. The Web officer will be given an office next to the director, not a cubby in the basement.

The role of museums in the future, that of the knowledge municipality, lies in legitimizing information and information processes and in being an advocate for knowledge as the province of the people, not the sole property of the great institutions. The paradox for museums is going to be practicing what they have long preached. The need in the coming era is for the empowerment of the public, as a whole, to absorb scientific and rational thinking and use new tools capably and intelligently, and to deploy these capabilities toward a better world. Or if not a better world, one that is less likely to slide backwards, and which is generally better informed.

What is a museum, after all? This is a challenging question. What function does the museum play in society? Again, this is not a given. The institution we are speaking of is not the Vatican or the Catholic Church. Nor is it AT&T or IBM. Somewhere between change-phobic millennial institutions and change-happy, stock-market-driven dot-com businesses is another model. It is argued herein that the museum is a bridge between knowledge and information running wild (as a result of the post-Cold War connectivity) and the world at large, which needs to understand the life-changing knowledge and information that is being generated daily.

This bridging role is a powerful one. There are no institutions or businesses to fill it, other than museums. It is not the province of schools or of steroid-

bloated, venture-capital funded businesspeople marketing to the huge educational market. Mediating between knowledge and information run amok, for its own sake, or making money, and the consequences and responsibility of that knowledge, is a role that the knowledge municipality can play – and for its work receive the gratitude of governments, schools, business councils, and nations.

The benevolent monarchs of the knowledge city-state must now become the dedicated teachers in the knowledge municipality. The problem for museums, just as it is for schools, is that the fabric of the institutions is going to have to race to the head of the class and learn some lessons from our children, who are perfectly comfortable with the digital paradigm. Does this mean that dioramas are going to be junked, and computers and interactive demonstrations will take over the marble hallways? Hardly. These are changes that are subtle and evolutionary. A computer may sit in the middle of the dioramas, and its interactive program may be stitching together the interdependence of the environments represented in a great hall of animals. Likewise, this activity may be on the Web, with learning modules attached. Here the web of information and connection weaves itself between the objects that are already present in the museum and the information that connects them to a larger world. This is an *in situ* transition.

Similarly, museums are going to have to learn to be more ruthless in managing change, a lesson they can take in small doses from the corporate world. If something is not working, if it needs to change, then the changes need to be made. To continue because "this is the way it is done" is no excuse at this change point in history. None of this is to say that change cannot be requested in a more democratic way. But museums and schools, it must be remembered, erected walls not just to regulate who gets in, but

to shield those on the inside from the progress of the rest of the world. As the banks, phone companies, health-care providers, and others line up to go online at the core of their businesses, the more traditional institutions must take note. It is but a matter of time.

And there is an even more serious role here, which museums already embrace, though more from a marketing point of view than from a social obligation. Simply put, humans have carved their existence out of nature's bedrock. In doing so, we have challenged nature, crippling it in some aspects, altering it in others. Because of our need for abundance, we are assuming for ourselves the management of our habitat, pushing nature aside and out of work. The tools we will need to use to create informed citizens are based in science and natural history. Yet the attitudes and knowledge we will need socially and culturally to make true awareness happen effectively are not here. Who is to fulfill the role of taking this message to the public? Who is to build the exhibits, develop the Internet, and author the books that argue this point in a way that surpasses the rhetoric?

If the last millennium was about taming natural forces for human comfort and safety, the next millennium is going to be about maintaining global balance in the face of increasing population. Here the equation is quite simple. Science equals survival. Somehow, this message is going to have to be carried to the public in a meaningful, non-threatening way. The knowledge municipality will be able to play an important role in doing this, a role that will keep investment from the government, industry, and philanthropy coming through its doors. Here the role is not in promoting sacred objects, but communicating the sanctity of life. In the common parlance today, it is about maintaining biodiversity. However, just as the great museums were able to create awe, wonder, and significance

concerning dinosaur bones and African masks, it is now going to have to be equally inspiring about the needs of the future and the needs of today, of the sifting through mounds of information and knowledge, separating out what is important, and getting the word out in a way that motivates, not just stimulates.

This is a tall order. But so was building one million-square-foot museums over one hundred years ago. The challenge is clear – the mission is too. Museums need to stop thinking about incremental competition with the rest of society. They must end the confusion of what they are (gift stores, public venues, research facilities, schools, product creators?) and concentrate on what they can become. Otherwise, they risk becoming artifacts themselves. Lastly, they need to get to know the future. Starting with interviewing the generation ten and younger is the surest picture of the future available today. What is going to make a difference for them? Not a distant object carved out of stone, but ten strands of information woven into a blanket that will protect them, amuse them, and inspire them, or the tools to make the strands that they or others might be interested in.

Finally, there are lessons to be taken from the film business, and from marketing in the computer world. The film business learned long ago about packaging and distribution. Nowhere is the lesson practiced better than at Disney. Here one fairy tale, quite improperly interpreted, can nonetheless be packaged simultaneously as a film, video, CD-ROM, book, Web site, and endless pieces of merchandise. This intellectual property object, in the virtual sense, can be given a dollar value, and the knowledge and its distribution can be priced. A business can be built upon it, a business that can send not only the new object, but also the object lesson with it to the buying public.

Another example, one that steals directly from the hallowed museum halls, is the film *Titanic*. Here a piece of history was packaged and distributed in many forms. So, the nature of this game is packaging and distribution. Museums can package toys and exhibits, but don't do so well on bundling up knowledge and selling it in the marketplace. Why is this? It is orientation as much as anything. If the same orientation were practiced in the film business, there would be only one theater in the whole country. There would be no videos, CD-ROMs, or books. There may be toys that would be sold locally. This model does not work in the business world. In the world judged by commercial success, the product or the service must go to where the customer is. It has to be accessible. It has to compete not as a product or service, it has to compete for the eyeballs and hands of the market. That is not about locale – it is about having information everywhere, with the museum's brand universally recognized as a quality provider, as an entity which will bring coherence to a world that is not coherent. In this sense, the toy is a Trojan horse, carrying inside it a virtual army of knowledge.

Museums must learn to package and distribute their products in a true sense. This is not plastic toys or gift cards. It is information and knowledge moved out from the studio (museum) to the world. It may be ever-changing museum kiosks in shopping malls or office buildings; it may be publishing its own books, or federating with other museums on a publishing imprint, or starting its own line of education products and on-line services. However, in the process of moving forward, the hubris of thinking that future endeavors can be conducted within the existing structure must end. This is about reinvention, not incremental steps, which will cost disproportionately larger amounts of time and capital. This is

about judging expertise, employing that expertise to build the digital Trojan horses.

There are lessons in evolution and there are lessons in the marketing of computers. True success in animal evolution was that newer, more nimble forms evolved. Not a better dinosaur, but newer species -- mammals. Often the transitional creatures are not to be found, only the victors, who are considerably different, who survived the natural catastrophe that did in the earlier form.

What has the computer industry learned from this lesson? Some have changed the rules of marketing. In many cases, products or tools are given away free so that future products and services will be purchased. Eastman Kodak knew this at the beginning of this century, when cameras were just about free so that film would be purchased. What does this have to do with museums? The tools needed to understand the abundance of information and knowledge could be given away by museums. These tools, like handing excavation tools to the multitudes, could make better citizens in the knowledge municipality. When the city-state ruled, the quality of the citizenry was not so much a concern, because the palace court had all the answers. In the knowledge municipality, the palace court may not be the place where the knowledge is concentrated, but it surely could become the place that mediates between those with knowledge and those without knowledge.

All of this is quite confusing, but very necessary. The stakes are high, and the kind of thinking is available to start the process of reinvention. It is a road, however, that will only make sense for the rulers secure enough to permanently take the gates down from the knowledge city-state. The market can no longer be controlled from a central point for only a few. It

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must be managed as a service for all, and a new breed of managers who are flexible, nimble, and ever-so-quick need to take seats alongside the palace guard. It is no longer who you know, but what you can conjure. The difference is that knowledge, unlike objects, needs to be handled by as many hands as possible. In the future, what we don't know will surely hurt us. The knowledge municipality can be our eyes and ears in that future.

Reinvention does not have to be painful or swift. The new form can grow up and emerge from the old. The process governing the emergence, however, must be broad, democratic, and informed by real knowledge and analysis. It will not be guided by opinions, attitudes, nor least of all by conventions.

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