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How do you define excellence?

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If your job role is based on a technology or content type — e.g. books, corporate records, news media, databases, user guides — these questions are increasingly difficult to answer. Because the Internet is expanding some boundaries and collapsing others, excellent performance in traditional roles is no longer enough. In this fluid environment, finding new role models and benchmarking partners is tricky. In this article we look at an alternative: owning the business problem as well as the technology solution.

The technology-based portfolio

Historically, the job roles of information professionals have been defined by publishing and information technologies: the printing press or the computer. The more technology-related skills we can list on our resume, the easier it is to get a job. Career paths are well known. Standards are codified and published through professional associations. We know who we are, and we know how to recognize superior performance.

But what happens when the technology changes — when physical libraries “go virtual,” databases morph into metadata-tagged documents, and policies and procedures become embedded in software? If the library disappears, what do the librarians do? If users can easily get computers to do their bidding, what do programmers do? If bloggers and podcasters become a significant source of news, what do journalists do? One answer is to isolate our “soft” skills from our technology-based skills. For example:

- organize information without using file cabinets or book shelves;
- create workable data structures and

security systems that will work in all kinds of environments (wired or wireless, closed or open, proprietary or open source);

- provide information analysis and quality control regardless of content type or format.

Another answer is to focus more on business problems and less on technology-based solutions. We’re not talking about abandoning traditional roles, just making their boundaries more porous, focusing more on issues of cost, risk, and revenues, and forming interdisciplinary communities of practice.

The problem-based portfolio

Successful senior executives and entrepreneurs rarely sell their technical skills. Instead, they promote their ability to solve a specific kind of problem. For example, one executive might be known for his ability to restore profitability to a money-losing company, while another might be recognized for her ability to win government contracts or increase revenues by opening new markets.

Similarly, successful entrepreneurs promote their ability to reduce compliance costs, add revenues through an online sales channel, or reduce time-to-market for new products — instead of touting their skills in usability studies, database design, or “knowledge management.”

The virtue of a problem-based portfolio is that it’s easy for the layman to understand and measure. Either you save the company money, increase revenues, improve brand image, and lower risks — or you don’t. Technologies may come and go, and the socio-political environment may change. But business problems — if you define them broadly enough — remain pretty much the same.

While the objectives and the metrics might be clear, the qualifications are elusive. Job de-

scriptions for information professionals typically focus on tasks, degrees, certificates, and years of experience. Yet the best recommendation for a problem solver is not a resume but a testimonial. To get a good one, you need to be able to define a problem, find someone eager to try a new solution, and create a promotional program in which your satisfied client becomes an enthusiastic partner. Rapid prototyping skills, reliable implementation services, and an understanding of cost/benefit issues are also a must. In this mode, you don't develop a system and then try to get "buy-in" from users, you find a user with a problem and help him solve it.

Selecting problems

So which problems do we want to own? Here are six business issues with some interesting possibilities:

1. Compliance & reporting — This cluster includes industry-specific reporting (e.g. F.D.A. reports for pharmaceuticals), as well as reporting that applies to all public companies (e.g. Sarbanes-Oxley and the Health Insurance Portability and Accountability Act). These problems require the combined expertise of records managers, metadata managers, and database administrator, as well as functional and industry specialists.

An example of an information innovator in this arena is Innovest, which provides "eco-efficiency" ratings for companies and investors. The service combines data analysis with interviews. Innovest has two groups of clients. The first is fund managers looking to select stocks that have sound financials and score well on the triple bottom line of social, environmental, and economic factors. The second is corporate PR managers who need a vehicle for marketing their company's stock to investors.

If you're struggling with an enterprise architecture initiative, triple bottom line reporting is a good place to start. In solving an investor relations and PR problem, you'll create an effective enterprise architecture as a by-product.

2. Information logistics — This cluster involves making sure the right information is available when needed. It includes making both human experts and documents accessible and "findable." It requires the collaboration of computer scientists, librarians, writers, and designers. A key part of the process is analyzing what decision makers really want to know — as opposed to what they say they're looking for.

One example in this space is the OpenURL standard, which makes it possible for readers to access footnoted references in journals. The standard makes it possible for a "link resolver" program to locate a copy of the electronic reference and provide a link to access it (assuming the user has the right credentials). The OpenURL is most common in academic libraries, but the basic principle can be adapted for corporate use, especially in extranets and decentralized organizations, where it's neither possible nor desirable to control the policies and technologies of the participants.

Another example is Juice Software (acquired in 2004 by ProClarity). Juice makes it easy for business users to create and share "smart" documents — live documents that update automatically — combining information from many different corporate databases and commercial services (e.g. Bloomberg, Bridge and Telerate). Dozens of small companies like Juice are swallowed up each year by larger firms. As a result, companies are forced to buy features they don't need to get access to those they want. The basic issue — integrating information — is an inexhaustible source of opportunity for info pros.

3. Intangible asset productivity — Intangible assets include employee know-how, "structural capital" (e.g. databases, business processes), and intellectual property (patents, copyrights, trademarks). This cluster is particularly dynamic. The open source development model is challenging the traditional software development model by substituting human capital for financial capital and open collaboration for secrecy. Do-it-yourself publishing and research allow authors to create

more sophisticated content in less time, and new forms of licensing (e.g. the Creative Commons copyright) shorten publication cycles and promote wider distribution.

The greatest productivity gains typically come from a combination of technology, collaboration, standards, and incentives. One example, the DuPont Legal Model, is a comprehensive knowledge management program that helps corporations reduce the amount they spend on outside legal counsel and improve the quality of legal services they provide to internal clients. Another example is Michael Milkin's Prostate Cancer Foundation, which speeds up research by streamlining the grant-funding process, giving researchers the freedom to explore their own ideas, and requiring that they share their findings.

4. Risk assessment & management — Risk management involves limiting the organization's exposure to bad events and bad people. While insurance can mitigate some risks, it can't eliminate them. From our point of view, the most interesting risks are those that involve "soft" attributes like brand image, reputation, customer perceptions, and relationships (as opposed to "hard" risks like natural disasters). Risk management requires an interdisciplinary approach and has been a major driver in e-government initiatives.

An example in this space is Genalytics, which specializes in risk assessment software — "genetic algorithms," data extraction and text mining — for credit card issuers, insurers, and mortgage underwriters. The same techniques are used to provide market-enhanced data services to list brokers for direct marketing applications.

Genalytics is interesting for two reasons. First, it applies the same kinds of technologies that are used for information retrieval purposes (concept extraction, text mining, and metadata management) to two other business problems: risk management and prospecting. Second, it's at the epicenter of a controversy about privacy and security. The backlash generated by the over-zealous application of technology is another kind of problem that needs to

be solved. Are there other ways, such as “upstream knowledge management,” to accomplish the objectives without alienating customers and creating security gaps?

5. Business intelligence — In this category we include information about a business’s customers, business partners, and competitors as well as threats and opportunities in the business environment. One challenge is the ongoing evolution of the “information food chain.” New relationships between authors, publishers, and distributors make it harder to assess the credibility of published sources and keep up with scientific advancement. Other challenges include “information mobility” (the ability to access information from anywhere using any kind of device) and information integration (the ability to acquire, store, and find information from any source).

An example of innovation in this space is MetaCarta, whose “geo-parser” software lets you search your document repositories using a map as a filter. The software scans documents looking for geographic references, including country, city and state names, postal codes, internet addresses, and the names of famous landmarks. It then adds “geotags” to the document files so you can refine searches and “drill down” with a map to find what your documents say about any particular place.

6. Business models & opportunities — This cluster of problems involves finding new ways of making money, satisfying customers, exploiting emerging technologies, and even creating new industries. Info pros have two roles here: staying on top of trends and helping design information services to capitalize on them.

Examples of innovators in this space are Aravind Eye Care System and Thisishowyoudoit.com. Aravind offers free eye care to patients in India. The free care is subsidized by the 30% of Aravind’s patients who pay market rates. The company stays profitable because of Aravind’s unique, two-fold approach: high patient volumes combined with low overhead and operating

costs. For more on this trend, see “The fortune at the bottom of the pyramid.”

Thisishowyoudoit.com makes money by leasing videos created by ordinary people on subjects such as how to catch catfish, potty train a child, how to connect a computer to your TV, or organize a speech. Customers pay a small fee — say \$10 — to download and view a video for a specified length of time. About 40% of the business comes from overseas; payment is handled through financial intermediary PayPal. For more about the user-generated content trend, see “More user-generated content.” Can this reduce corporate training and documentation costs?

Where to find interesting problems

Finding interesting problems requires a different mindset. Here are some tips:

1. Expand your reading list. Read the books and periodicals that CEOs, directors, strategic planners, and venture capitalists read. For ideas on where to look, read the “Information hunting and gathering” chapter of *The Art of the Long View* by Peter Schwartz.

2. Mine your own experience. Stop to reflect on your own experiences — both business and personal. If you find something exciting or frustrating, ask yourself why and look for the business implications.

3. Branch out. Every other year, attend a conference outside your specialty. If you see yourself as a records manager, go to a trade show aimed at risk managers. If you’re a librarian, go to an event aimed at marketing or R&D managers.

4. Follow mergers & acquisitions. Companies such as Microsoft, Yahoo, and Google have been on an acquisition spree. Find out who they’re acquiring — and why.

5. Keep an eye on academia. Colleges and universities are the ultimate intellectual capital organizations. Keep an eye on what their libraries and IT departments are doing. EduCause and the Chronicle of Higher Education are

two good sources.

6. Be charitable. Contribute your time and expertise to a charitable activity. It will not only broaden your perspective, but expose you to different kinds of solutions — those that depend on contacts, collaboration, and ingenuity (not just money).

Conclusion

Today, excellence in information management requires more than technology or content-based skills. It also requires seeking out and solving business problems. You can find opportunities in the areas of compliance and reporting, information logistics, intangible asset productivity, risk management, business intelligence, and new business models. For benchmarking purposes, this means looking for peers in a broader range of organizations — small companies, international firms, nonprofits, and startups — and partnering with information pros in other disciplines.

In the last analysis, it may be that excellence is defined as finding new approaches to fundamental business problems, exploring contrarian points of view, interdisciplinary partnerships, and continually reinventing your services.

Leadership agenda 2012

Several recent news items have started me thinking — again — about what the future holds for information professionals — and what we should be doing to stay ahead of the game. By “we” I mean those of us who work on cutting edge technology projects that span multiple disciplines — or who would like to make the transition from well-defined roles such as knowledge manager, taxonomist, project manager, or editor to more strategic roles with broader influence.

In one sense, the information landscape hasn’t changed much since I wrote “How do you define excellence?” in 2005, but now some of the features have come into clearer focus. In this article, I’ll discuss the information leadership context in today’s organizations,

show where to look for trends, describe some interesting indicators, and draw some conclusions about where we should be leading our organizations in information strategy.

The leadership context

I think there are three reasons why we periodically need to get out of the foxhole and look at the big picture:

1. *Coping with disruptive change.* By this I mean Clayton Christensen's insight that technological innovation almost always outstrips the ability of organizations to absorb change. That's because they cater to the needs of their best customers, thus leaving an opening for cheaper, simpler, and more convenient products. Until recently such knowledge-intensive industries as health care, education, and legal services have largely been shielded from the forces of disruption, but we've reached a tipping point even in those markets where fundamental change is too hard to ignore. We need to be able to look beyond traditional skills and business models to help organizations take advantage of the opportunities and respond to the threats of disruptive change.

2. *Increasing investment returns on current projects.* The challenge here is to create realistic expectations and new metrics when major new technology platforms – such as SharePoint – are implemented. For example, it is common to blame the technology (or the implementers) when anticipated productivity increases fail to materialize. Instead, an incomplete information ecosystem may be a big factor.

3. *Preparing for career change.* Disruptive change brings both opportunities and risks, for individuals as well as organizations. Someone who can help an organization make the transition from making commodity products to offering high-margin knowledge services probably doesn't have to worry about layoffs or job prospects. On the other hand, some organizations aren't able to heed the counsel of those who point out that the organization's business

model cannot accommodate a disruptive innovation or that a new technology will require a new kind of information infrastructure.

Where to look

When I look for potential sources of disruption and their effects on the workplace, I mine three areas:

- The consumer marketplace;
- Higher education;
- Government.

Each of these has strengths and weaknesses, which I'll discuss below.

The consumer marketplace

The consumer marketplace is the most obvious place to look for trends. One reason is heavy press coverage of new devices and services. Another is that employees bring their preferences for things like mobile computing and social networking to the workplace. But there are 3 reasons to be skeptical of what we see here:

1. *The corporate environment is different.* Consumer-oriented products and services might perform differently in the workplace. A classic example is the Google search engine, which works well on the public Internet but often not as well for corporate intranets. A major reason is the relative scarcity of internal content that Google uses in its relevancy ranking algorithm. Other common issues are the unwillingness of some employees to share their know-how, the need to comply with regulations, and data security requirements.

2. *Fad cycles.* Consumer trends, as reported by most journalists, tend to rise and fall quickly. New products and services are touted when they are introduced. Vendors again make news when they receive large infusions of capital or are swallowed up by a larger organization. After that, they are pretty much ignored, making them harder to track.

3. *Technology focus.* The hype surrounding consumer goods makes it all too easy to focus on new technol-

ogy – e.g. cloud computing, mobile computing, relevancy ranking, social networking – instead of the underlying business issues.

That said, I see four news items of interest on the consumer front:

1. *Google's Knowledge Graph.* This month Google announced an upgrade to its public search service. Called "Knowledge Graph," the feature uses semantic web data from Freebase, Wikipedia, the CIA World Factbook and other sources to provide additional context to search results.

By "context" I mean not only biographical information about people and map data about retail stores, but also information from Google users (e.g. similar things that people also searched for). In some cases, the service can also distinguish between different meanings of the same search phrase (e.g. "Taj Mahal" the monument and "Taj Mahal" the musician).

Knowledge Graph not only puts the semantic web in the search and discovery mainstream but also highlights the difficulty of fact checking and updating in a complex, interconnected system. See "Google's Knowledge Graph Is No Ugly Duckling."

2. *Harvard Book Store.* This book retailer successfully competes with Amazon.com by creating a unique book browsing experience, printing books on demand, and offering eco-friendly book delivery to local customers.

The Harvard Book Store shows some ways to cope when your job role (e.g. librarian, computer programmer) is wedded to a physical thing. See "The Man Who Took on Amazon and Saved a Bookstore."

3. *BigML.* "Big data" is used to describe the voluminous amount of data a company creates in the course of doing business. Much of the hype centers around creating sophisticated software to find patterns that can be translated into performance improvements. BigML is a cloud-based service that lets individuals and small companies do something similar.

BigML is the latest in a long line of end user development tools that illustrate Christensen's principle of creative destruction by offering a good enough service to a market of "non-customers" (those who wouldn't otherwise use data analytics) See "Your data has a secret, but you — yes, you — can make it talk."

4. *How a college professor fooled Wikipedia.* As a rule, info pros are leery about stuff they find on the public Internet. Now we know how bad it can get. A George Mason University professor who teaches a course called "Lying About the Past," encouraged students to make up tales and post them on Wikipedia.

Four years ago, students created a Wikipedia page detailing the exploits of a fictional pirate called Edward Owens, successfully fooling Wikipedia's community of editors. When the students launched their stories on Reddit, however, the hoax was quickly discovered.

This example exposes a major weakness of social networking. The bottom line is that it's better to be skeptical than trusting when evaluating public Internet content. I suspect the same thing holds true for internal corporate information.

Higher education

I pay close attention to what's happening in academia for three reasons:

1. *Pure intellectual capital.* Higher education sells three intangible assets: certification of career readiness, domain knowledge, and research results. Universities have been in the business of creating, acquiring, and managing intellectual capital for a long time. It's worth knowing how they do it, since many of their techniques eventually find their way into the corporate and government sectors.

2. *Rich information ecosystem.* Universities are part of an integrated system that is both competitive and cooperative, centralized and decentralized. The system includes local and national government agencies, semi-independent experts, professional

associations, commercial publishers, and suppliers of specialized knowledge services. It will be interesting to see how the system evolves under increased competition and calls for greater cost effectiveness in higher education.

3. *Future workforce.* We all know that new graduates are adept with mobile devices and are familiar with social networking, but how will other elements of the evolving university experience affect their expectations and performance as employees and/or contractors?

Unlike the consumer marketplace, which is faddish and volatile, higher education is tradition-bound, bureaucratic, and encumbered by a slow, complex decision-making process (a situation similar to most large organizations). To find trends here, I look at what university CIO's are thinking and watch for disruptive new services on the fringes, like the Khan Academy and Udacity. Of recent interest are the following:

1. *Open Researcher & Contributor ID (ORCID)*, a project to assign unique identifiers to the world's scholars, thus creating a kind of global name authority. The service is supposed to help universities identify the publications and other scholarly works of their faculty and students — information they need for institutional repositories, expert discovery, research assessment, and scholar evaluation. The system will also enable the creation of new services and provide a better way to track data curation. A key feature of the service is that it will enable linking to existing author identification services. Initially, the service will focus on active researchers, who will be able to create, edit, and obtain an ORCID ID free of charge.

ORCID is an important step in the evolution of a global intellectual infrastructure and will be especially interesting to organizations (e.g. government, high technology, and medicine) with strong university relationships. See "Open Researcher & Contributor ID (ORCID): Solving the Name Ambiguity Problem."

2. *"High impact" practices* aim to change the one-way relationship between the university and its students from "learning about" content to being able to practice a skill ("learning to be"). One of these "high impact" practices is the ePortfolio — similar to a SharePoint MySite or Facebook page but more introspective.

This is knowledge management in an environment where university CIO's are struggling to help their institutions adapt to a rapidly changing and highly disruptive environment. It's interesting to see how elements of the traditional information infrastructure (i.e. libraries, experts, the publishing pipeline) are adapting.

3. *The changing role of IT within the university.* Each year Educause, the professional association for academic CIO's, publishes a list of the Top Ten IT Issues. Previous lists reflected individual IT departments: administrative systems, academic computing, IT security, networking, etc. This year's list focuses attention on managing the blurring of organizational boundaries and capitalizing on the potential of new technology outside the control of a centralized IT staff.

The most forward-thinking university CIO's advise shifting the focus from technology to data, upgrading the skills of IT staff to increase the number of non-technical people embedded in academic and research departments, finding people with contractual and negotiating experience, developing new metrics and embracing evidence-based decision-making that positions IT as a strategic partner rather than a cost center.

Government

Of the three areas, government is the most stable. It may shrink, but it won't disappear. However, it too is being buffeted by the forces of disruption. Some taxpayers are worried about income equality and unraveling of the safety net. Others are more concerned about the cost effectiveness of government expenditures.

This sector interests me for five reasons:

1. *Stable funding source.* Unlike customers in the consumer and academic marketplaces, the taxpayer can't opt out of the system. He can choose to send his kids to a private school, but he still has to pay taxes to educate the less fortunate. True, tax revenues fluctuate with politics and the economy, but they don't disappear completely. This relatively stable funding source can be tapped to create and maintain an information infrastructure that, like the highway system, can take decades to complete.

2. *Spending catalysts.* Disasters like the September 11 attacks or hurricane Katrina focus everyone's attention, at least for a while, on the gaps in government services. Sometimes this energy spurs much-needed investments in government data, software, and information policies.

3. *Mandates.* Although trade and professionals organization create rules and policies for members in the consumer and academic marketplace, government has the greatest ability to promulgate and enforce information-related policy. Governments can also create and fund multi-sector commissions to help create policies and oversee their implementation.

4. *Lots of data.* Government generates an enormous amount of data, which is not only of interest to public sector agencies at all levels, but which also represents a business opportunity for private sector firms.

5. *Transparency.* It's easier to observe the nuts and bolts of the evolving information infrastructure in the government sector than in the private sector.

The following two articles echo trends in the consumer and university sectors:

1. "Information Sharing," a white paper recently published in Federal Computer Week, summarizes documents and comments from several sources.

Our readers will recognize several of our persistent themes: the need

for better metadata, knowledge of business practices, as well as standards and policies. The paper also quotes a GAO report indicating that the Information Sharing Environment mandated by the Intelligence Reform and Terrorism Prevention of Act of 2004 is only half complete. If this estimate is right, full implementation will take 17 years.

2. *Linked Open Data Principles Applied To Code Of Federal Regulations (CFR).* The Legal Information Institute (LII) at Cornell University Law School published a new electronic edition of the CFR which, among other things, allows readers to search its Title 21 Food and Drugs database using brand names for drugs (e.g. "Tylenol") and receive the generic name (e.g. "acetaminophen") as a suggested term.

Plans include using semantic web techniques to enhance the CFR by including chemical, pharmacological, and pharmaceutical data from the Drug Bank database and product information from the North American Industry Classification System (NAICS).

The leadership agenda

We play a unique role in the corporate information ecology by bridging four specialties: information technology, library and information science, communications (corporate journalism), and strategic planning. To play this role effectively, we need to stay up to date on technology and business trends, but we need to look beyond general business publications, industry "rags," and professional literature. Three areas to watch are the consumer market, higher education, and government.

Technologies come and go, but our basic agenda is remarkably stable. Overarching themes include:

- Evangelizing for specific boundary-spanning roles, including how to best deploy both human and computer intelligence;

- Participating in information ecosystem development through metadata management, standards and policies, and new kinds of metrics;

- Upgrading information tools and skills, especially for subject matter experts and end users;

- Providing customized information tools and services to support "skunk works" and other fringe efforts to help large organizations respond to the challenges of disruptive change.

No one said this agenda is easy. It will not be welcomed (or even understood) by all C-level managers. It requires out-of-the-box thinking, dialogue with users, and the willingness to take professional risks, but I think it's the highest and best use of our education and experience — and it's critical to the large organization's ability to adapt to a rapidly changing world.

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