Turning adversity into opportunity – Entrepreneurship and the information professional [1]

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Huffington Post, 2010: Four young blog editors and I were sitting around after work talking about the new iPad that some of us had previewed and the fact that it would have an enormous impact on the newspaper industry. I naively included Huffington in that category and said I was looking forward to reading my papers over breakfast on an iPad much as I had always done. A comment from one of the editors knocked me for a loop. "There is one problem with that", she said. "There is no longer any news in the newspaper".

Fast forward eighteen months. I am in bed reading the New Yorker before going to sleep, a habit of mine that is over 40 years old. Now I read it on my iPad. A voice emerges from the pages. I gasp and so does my unsuspecting wife. "What's that?" she asks. "It's the poet reading her poem", I replied. We huddle together looking at the screen and realize something big has just happened even if we don't fully understand its implications.

Three months later I am sitting in my living room again reading the New Yorker on my iPad while listening to music on my stereo which is also now wirelessly iPad controlled. I come across a review of an album I can't wait to hear. Click, I go to iTunes. Click, click, click, I buy and download the album. Click, click, I begin listening to the album and click I go back to reading the New Yorker right where I left off. I paused for a moment and said, "Thank you Steve Jobs".

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1. The information reset

Nothing about these three events is particularly unique and by themselves they are merely isolated experiences. Multiplied across millions of consumers they suggest fundamental changes are taking place in the nature of what those in the business have referred to as "content" ever since Bill Gates' famous essay, *Content is King* [2].

Even before the iPad, content providers have been bypassing traditional media and creating new channels for delivering, sharing, and accessing information. Readers no longer get their news from newspapers. Changes in readership and declines in classified advertising are ripping apart one of society's most venerable institutions. Similar changes are rippling through the film, radio, and book industries. For instance, predictions made decades ago that most of the world's books would someday be digitized have come true and the very meaning of the word 'book' will never be the same. All of this is being driven by swift technological change and the optimistic sense that there is still enormous value in content that is yet to be unlocked.

2. Content, context and convergence

The iPad and other consumer devices serve as the 'last mile' for providers of content-in-context. Today, we don't 'go' to get information, information flows to us, when and where we need it. What once was science fiction – ordering music on iTunes from within an album review in the digital *New Yorker* – has now become routine. This is all possible due to the convergence of rich digital content, ubiquitous wireless consumer electronic devices, a robust e-commerce infrastructure, and socially augmented applications. The commercial impact of all of this is only beginning to be understood. What content will consumers pay for and what will inevitably be free? How will publishers of reviews be compensated for 'click-through' sales? What models are needed to make curation and aggregation of social media economically viable?

The information profession can view this uncertainty as a threat or an opportunity. Content creators and intermediaries who are afraid to take risks and unable to take advantage of new technologies will be superseded; a reality that gives urgency to the need to come to grips with what has been called "the new normal". We believe library and information science (LIS) graduates can play central roles in commercial and non-commercial opportunities in this new environment. They can bring competencies in the organization and curation of information, user-oriented service development, and information technology skills to these enterprises. Yet these strengths alone are not enough. We believe information professionals must also function effectively at the intersection of innovation and execution which, in our view, requires entrepreneurial thinking.

3. What is entrepreneurial thinking?

In the words of Peter Drucker: "Entrepreneurs innovate". They connect the dots in ways that are often obvious after the fact and they relentlessly execute their ideas even with inadequate resources and no guarantee of success.

We return to Apple and the creation of the iPod for an example. In the late 1990s, digital music was played on 'clunky', hard to use MP3 players, piracy was at its height, and the music industry was in total disarray. At this time, Apple Computer was struggling as its personal computing market share

had dropped precipitously. Out of desperation, the Apple board invited company founder Steve Jobs to return. Jobs inherited a company low on cash and short of good ideas.

The chaos in the music industry looked like a nightmare; but to Jobs it looked like an opportunity. He was convinced that consumers would pay for a music service, if it was inexpensive and easy to use. And so Jobs created a small group within Apple to work on the iPod and the iTunes store. Ultimately Jobs and Apple turned the industry on its head by selling an inexpensive music experience to encourage purchase of the iPod. This was the first product of a line of lifestyle appliances that revolutionized Apple. Jobs and his colleagues never looked back and Apple is now the world's largest corporation.

4. Entrepreneurs solve problems

If viewed as an entrepreneurial activity, creating information systems and services is never *just* about information or computing. Information systems are built to meet users' needs and to solve real-world problems. Yet, IT skills are not enough. Information entrepreneurs need to master the skills of problem solving and creative thinking typically viewed as the province of the liberal arts.

The American Association of Colleges and Universities (AAC&U) identified *problem solving* and *creative thinking* as two essential learning outcomes of a liberal education in the 21st century. Students who master *problem solving* can define a problem, identify and evaluate multiple approaches to solving it, execute an approach that will likely bring success, and then evaluate the outcome. *Creative thinkers* synthesize knowledge and diverse ideas to create wholly new solutions to problems. They are comfortable with ambiguity and contradictions, and do not avoid taking risks [3].

LIS is a translational discipline that can provide students with ideal settings and opportunities for honing these skills. The work of a translational discipline "straddles the border between academia and the real world" [5], 'translating' research into solutions to important problems. A prime example is engineering in which faculty and students apply research findings and techniques to solve real-world problems. LIS programs too have a responsibility to bring 'information expertise' to bear on problems in the 'real-world'.

Information entrepreneurs cannot solve problems they know nothing about. They must engage and collaborate with experts in other academic disciplines, external partners, and clients to discover the information problems most in need of solutions. LIS programs have a long history of preparing their graduates for roles in the information professions resulting in a practical, outward focus to their curricula and research agendas. This is a true strength of the information fields. However, more intensive collaboration is needed to provide students with the opportunities to develop the problem solving and creative thinking skills needed in the "new normal".

5. Recommendation: Initiate projects and partnerships

For years, LIS programs have partnered with internal and external organizations to provide students with 'on-the-job' training and opportunities for group projects. These are important relationships which in many cases result in first jobs for our graduates.

We recommend going a step further by seeking out entrepreneurial opportunities for our students through relationships with university-led or regional incubators. The Syracuse Student Sandbox for startup companies [4] and the UNC Social Innovation Incubator [6] are just two examples of university-sponsored incubators. Students working in an incubator are surrounded by peers with similar motivations

where they learn the entrepreneurial skills of teamwork, risk assessment, and creative problem solving. Another possibility is encouraging internships for students with incubators or startup companies themselves. In these environments, students will work with entrepreneurs learning to apply what they've learned in the classroom toward commercial or non-commercial ventures.

Commercial partnerships can serve as catalysts as well. Faculty and students working alongside commercial partners exposes the community to new ideas and to problems that need to be solved.

Finally, internships and partnerships should not be reserved for the annual report. Internship sponsors, departmental partners, and entrepreneurs should be invited to the school as public speakers and to serve on panels exposing the entire community to new ideas.

6. Entrepreneurs are impact oriented

Entrepreneurs have a vision for what the future might be and act to create that future. In so doing, they have an impact on the world. To find his or her way, the information entrepreneur must possess the critical abilities of assessing, measuring, and communicating impact associated with a venture. Who will the venture help? How big is the market? Entrepreneurs must be able to communicate the potential impact (and risk) of a project to stakeholders or investors at its inception to gain acceptance and then again at closure to assess project success.

Since the late 1970s, the user-oriented research paradigm in information science has yielded a rich literature focused on the value and impact of information. Value and impact may be quantified in financial terms, but more often are measured in terms of user success or user outcomes. In either case, information entrepreneurs will seek out or build models for measuring and communicating impact.

7. Recommendations: Add entrepreneurial competencies to the curriculum

LIS programs should provide students with exposure to and experience with methods for assessing, measuring, and communicating the value and impact of information resources and services. These skills are essential for entrepreneurship, but they are also becoming essential skills in all enterprises. Stakeholders in private and public organizations increasingly demand evidence that products support the financial bottom-line and services make a difference in people's lives. Graduates who can develop methods for answering these questions will be in demand in the workforce.

Information professionals should also have a fundamental understanding of accounting and finance. LIS students intending to work in the non-commercial sector are not exempt. Currently, some programs offer management courses that cover budgeting basics and occasionally students can take a full course on finance for non-profits as an elective. We recommend programs offer a short-course on financial literacy for the information entrepreneur.

8. Recommendation: Encourage entrepreneurs-in-residence

We realize that these changes will not happen by themselves. While numerous faculty members in the translational disciplines are entrepreneurs in their own right, an entrepreneur-in-residence can be a catalyst for change as well.

An entrepreneur possesses the skills of calculating risks, assessing impact, and acquiring funding. These skills can complement those of fellow faculty innovators in the LIS program, turning a good idea into a going concern. Perhaps as exciting are the opportunities for students who apply to an LIS program because they have innovative ideas they want to test and financial goals of their own. Interacting with faculty mentors and entrepreneurs-in-residence can provide a student with a solid background in the discipline and the entrepreneurial skills needed to build a venture. The trick is finding entrepreneurs who can meet the academy at least half way. To the extent that an entrepreneurial practitioner understands and appreciates the role of the academy and faculty members appreciate the perspective an outsider brings to the conversation, there is opportunity for real innovation in the LIS curriculum.

9. Entrepreneurial thinking can transform the profession

"Innovative opportunities do not come with the tempest but with the rustling of the breeze" [1].

Peter Drucker

10. Conclusion

Entrepreneurs are attracted to rapid change like moths are attracted to light. Such change, which is often viewed with alarm by big institutions, is the greatest source of entrepreneurial opportunity. Although there can be reasonable disagreement on the direction of change in the information world and whether or not the change is positive, there can be little doubt that the information profession must change with it. Such change will be more than an academic exercise. It will take place at the intersection of innovation and execution, a space where entrepreneurial thinking is required. Academic institutions that successfully negotiate the challenges created by the rapid change in the information industry will be the ones that embrace and even welcome rapid change and the entrepreneurial opportunity such change offers.

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