How to make yourself indispensable

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Abstract   In order to increase their value to the organisations they work for, information and library professionals need to develop flexible, transferrable skills and be able to identify and warn of possible risks that those organisations may face. This paper reviews some of the potential risks inherent in current information-related developments, including cloud computing, data security, regulatory compliance, personal privacy, the influence of social media, skill shortages in exploiting big data and the current limitations of data analytics. The author explains that there are certain characteristics in any new development that can give warning of potentially disruptive change ahead. Characteristics to look out for include: two or more developments proceeding in parallel; patterns whose similarity could provide advance warning of change; small developments that might give early warning of larger ones; counter-intuitive or counter-cyclical developments; the 'bandwagon' effect, where later entrants try to imitate earlier success; and backlash against current developments. With evidence of large-scale economic and employment disruption on the way, it is essential for information and library professionals to render themselves indispensable by getting into the habit of detecting potentially significant developments.

Introduction

I'd like to begin by introducing you to a friend of mine: Michele Bate. She's a due diligence researcher, employed by companies to investigate and report on potential partners, suppliers and customers. But when people ask her at parties 'What do you do for a living?' she doesn't say 'I'm a due diligence researcher'; that would be guaranteed to cause their eyes to glaze over and encourage them to move away to a far corner of the room. So instead, Michele says: 'I save people from embarrassment'.

A couple of years ago I was at a breakfast discussion convened by Sue Hill Recruitment, a leading employment agency for information professionals in the United Kingdom. The discussion came around to how information professionals sell themselves, to ensure that their value to the organisation they work for is recognised. The consensus was that the value we can offer is flexible, transferrable skills – but the benefit that we sell to our bosses is management of risk.

Saving people from embarrassment, helping them to manage the risks they face. Who wouldn't want that? But to be able to do it, we need to know what's coming and be ready to warn about it. How? We're not futurologists, nor professional forecasters. But we are trained in our information work to review content quickly and spot patterns; that's how we can keep ourselves well informed about the information landscape. So we also need to be able to detect new developments that might impact on the organisations we work for.

The big information issues

Let's review some of the current big information issues and think about what they may mean for future – beginning with…

Cloud computing

About a year ago, cloud computing was arguably at the top of its hype cycle. Everyone in the industry was talking about it; it was going to offer the comprehensive answer to the perennial question of how to provide the computing power and capacity needed to deal with ever growing volumes of data, at the time it was needed and at an economical price. Since then, though, the hype does seem to have died down somewhat, and businesses are taking a more measured approach.

In a survey carried out by the global accountancy firm KPMG for the *Forbes Insights* report series last November, over 80% of businesses were either planning or making early forays into the cloud. But they were being discriminating in their approach, focusing for example on self-contained functions that did not require integration with core applications, and using private clouds rather than public or hybrid ones.

However, chief executives and chief information officers each thought that the cloud should be their responsibility. Enter, therefore, the chief integration officer – a go-between dedicated to breaking down silos – and a host of big picture issues that would-be integration officers might want to consider. KPMG's report referred to infrastructure, platform, software and business processes 'as a service' – to which the technology analyst Gartner added disaster recovery 'as a service'. It predicted that a third of mid-sized companies would be using it within a couple of years and achieving significant reductions in their disaster recovery budgets – but Gartner nevertheless warned that hailing it as a 'killer app' was largely hype [1].

Security

One of the issues raised by cloud computing is undoubtedly security; if you entrust your data to a third party, perhaps located in a foreign jurisdiction, how safe is it? But that's just one of many security issues currently exercising organisations. Fed up with corporate IT systems that don't work properly any more (because chief information officers are too busy focusing on the cloud), people are increasingly bringing their own superior kit to work in the form of tablet computers. This practice is bound to increase as more and more digital natives – people who've grown up with technology and take it for granted – come onto the job market.

The practice is known as 'consumerisation', and in a survey last October, the computer manufacturer Dell found almost 90% of respondents reporting that employees used personal devices for work purposes [2]. The finding was reinforced by a subsequent report from the analyst IDG Direct. Over half of the IT decision makers it polled said they 'always' used their iPad at work, while most of the rest did so 'sometimes' – and almost four fifths 'always' used their iPads when on the move. If employees would otherwise still be struggling along with a five-year old XP machine that takes 10 minutes to boot, you can't really blame them – but it does raise security issues [3].

Regulation

More security issues inevitably mean more regulation by the authorities, and there's no shortage of vendors offering technological solutions. Over a third of the people contacted recently by Thomson Reuters reckoned they spent a day a week just keeping up to date with regulatory changes – and they were still struggling to stay ahead. So they had difficulty finding the time to co-ordinate with other parts of the company managing regulatory risk,

and probably weren't able to keep their bosses properly informed about compliance issues either. Thomson Reuters obviously sees an opportunity here, in the shape of its Accelus suite of compliance solutions. But it is not alone.

Last January, for example, Wolters Kluwer launched a mobile version of its ComplianceHeadquarters website, to provide financial organisations with the latest bank regulatory information, and it has also recently acquired the regulatory compliance content of Pringle Policy and Procedure Solutions. Meanwhile the global professional services firm Deloitte has launched a Center for Regulatory Strategies, allowing executives to keep an eye on regulations for specific industries and their implications. With so many competing and overlapping products to consider, there has to be an opportunity here for astute information professionals [4].

Privacy

Most of the regulatory compliance issues raised so far have related to financial compliance in the wake of the global financial crisis. But another regulatory issue is catching up fast: privacy. In both Europe and America, regulators are getting tough on privacy. But while the Americans favour the carrot to persuade the donkey to move, the Europeans prefer the stick to force it to. The United States Federal Trade Commission (FTC) recently issued proposals for Do Not Track regulation – allowing internet users to bar website owners from keeping track of where they visit. It's still a bit permissive at this stage, about encouraging companies to adopt best practice. But the FTC also recommends that Congress considers enacting legislation covering general privacy, data security, breach notification and data brokers.

The European Commission's proposals are much tougher – but already the United Kingdom's privacy watchdog the Information Commissioner has suggested that the European Do Not Track proposals are unworkable and Britain's Ministry of Justice has said that the European proposals are biased too much in favour of citizens' rights to the disadvantage of business. But perhaps they'll need to be; when Google was telling the world about its new privacy rules recently, it appears to have illicitly used the email accounts of Virgin Media customers to do so [5,6].

Meanwhile, though, individuals seem to be resorting to self-help and not waiting for the authorities. A recent study by the Pew Research Center's Internet & American Life Project found that around six in 10 social media users are now setting their profiles to 'friends only', while another fifth allow only friends of friends in. What's more, the numbers of people pruning their friend lists, deleting comments made about them by others and untagging photos identifying them have also increased. Another survey from the University of Queensland in Australia has found that 70% of people have decided not to use an app because it wanted to know too much about them and 80% have simply refused to provide personal information when requested. Finally, an experiment by the European Network & Information Security Agency suggests that 80% of people would be prepared to pay a premium for their information to avoid having to reveal their personal details. Developments such as these certainly represent bad news for the analytics industry, which we shall return to shortly [7].

Social media

Even more privacy issues are raised by social media. Job applicants, for example, may assume that employers will use their 'official' CV on LinkedIn to research their background – but they'd be wrong. According to a survey by jobseeker reputation consultant Reppler,

only half of employers bother with LinkedIn to screen potential candidates, compared with three quarters who use Facebook. Seventy per cent of those employers have rejected candidates because of non work-related information they have seen about them on Facebook – and Facebook's new Timeline makes it all the easier for them to spot things that the job applicants might prefer them not to know [8,9].

But companies need to be apprehensive about social media too – especially the growing power of pictures. Last November, the Mashable blog reported that the picture orientated social site Tumblr had enjoyed 200% growth in the United States from 2010-2011, compared with just 14% for Facebook. And figures from the content sharing specialist Shareaholic suggest that another, newer picture site – the virtual pinboard Pinterest – is driving more referral traffic than Google Plus, LinkedIn and YouTube combined. Pictures matter because they're such a powerful communication medium and can do a lot of corporate damage. Take the musician Dave Carroll. Dissatisfied at United Airlines' response to his complaint about a damaged guitar, he got together with friends to create a music video about it and posted it on YouTube. It got four million viewings in 10 days and is reputed to have knocked 10% off the value of United's shares [10].

Traditional companies also face the threat of being ousted by another social media phenomenon: collaborative consumption. In her book *What's Mine Is Yours*, Rachel Botsman forecasts the growth of an economy where individuals trade directly with each other, using social media and cutting out traditional suppliers. She cites three up and coming examples: Taskrabbit, where people offer local domestic or office services; Whipcar, allowing you to hire a neighbour's car; and Air BNB, which enables you to rent out space in your home. Community self-help is not new, she acknowledges, but technology makes it scalable. It's built on trust, not conventional contracts, and Ms Botsman foresees a time when your reputation capital will matter more than your credit rating [11].

And as if that weren't enough, there are even suggestions that the social media bubble is actually about to burst. The latest International Communications report from the United Kingdom telecoms regulator Ofcom quotes figures from the market research firm Nielsen showing that internet audiences in both the United Kingdom and the United States are now 'relatively flat'; in other words, there's not much more growth to be had in mature markets. And the analyst Gartner is actually predicting that, by 2013 for consumer networks and by 2014 for enterprise social software companies, the social media investment bubble will have burst. A large crop of vendors with overlapping features are competing for a finite audience, it warns, and smaller independent operators will find opportunities for market differentiation and fast growth eroding [12].

Big data
There's a similarly troubled picture for big data. Plenty of authoritative evidence shows that the skills to exploit it just aren't available yet.

In its report *Big Data: Harnessing a Game-Changing Asset*, the Economist Intelligence Unit (EIU) found that companies that used 'data-directed decision making' enjoyed a 5-6% boost in their productivity. Nevertheless, a quarter of senior executives believed that the vast majority of their data was untapped, and over half admitted to making use of only about half of it. Crucially, though, the EIU found that companies were now taking longer to reach decisions than five years previously [13].

The technology analyst Gartner also found that many companies didn't have the skills to exploit big data analytics and make faster changes in their offer to customers as a result [14]. And in its 2011 *Survey on Unstructured Data*, the consultant MarkLogic found two out

of five respondents saying that upper management were barely aware of the volume of unstructured data in their organisations, and front line staff were seriously concerned as a result.

Enterprise search – the key to discovering what's in your big data – is similarly flawed says the consultancy Infocentric Research, in its report *The Digital Workplace*. There are lots of skill-related reasons for this, it says, but the root cause is that enterprise search doesn't know what you're doing, and hence why you need the information that you're searching for. To illustrate this, Infocentric introduced a splendidly politically incorrect (and 1956-vintage) exemplar: 'Gabriele – the Perfect Secretary'. 'Gabriele' provides the missing link because she understands the context in which her (cigar-smoking) boss works. Enterprise search won't be able to match the value she used to offer until it can do the same – working out by itself, for instance, that when you get back from a conference, you need an expenses form [15].

Analytics

If the big data doesn't work properly then nor can the analytics that are applied to it. So concerned are they at analytics' failure so far to come up with actionable web metrics that three American advertising associations – the Association of National Advertisers, the Interactive Advertising Bureau and the American Association of Advertising Agencies – have set up an initiative called Making Measurement Make Sense to try to improve them [16]. And in its report *The Long View: Getting New Perspective on Strategic Risk*, the Economist Intelligence Unit found 18% of respondents complaining of a lack of tools for assessing long term risk, but almost twice as many complaining of a lack of analytical expertise [17].

But the sharpest criticism seems to be reserved for so-called sentiment analytics – attempting to discover from the available data how people feel, and what their mood is. A report from the management consultancy Bain, *Putting Social Media to Work*, makes clear that sentiment analytics is currently in its infancy, and exhibits serious limitations. Misspellings, gibberish, sarcasm and slang in the language that it is supposed to be analysing necessitates time-intensive manual manipulation of the data, Bain says, and few sentiment analytics customers would currently recommend their service to others. Yet Thomson Reuters is now offering its News Analytics sentiment indicators for use in algorithmic trading – automatically executed trades based solely on machine-generated data [18].

Embarrassment and risk – what to look out for

Focusing on negative developments such as these may seem depressing, but it does help to highlight the potential risks against which we should guard and warn others. So how do we recognise what may be coming? Spotting some of the following characteristics might help:

- Parallel developments
- Patterns
- Straws in the wind (small developments that might give early warning of larger ones)
- Counter-intuitive developments
- Counter-cyclical movements
- The bandwagon effect (more and more people doing it just because other people are)
- Backlash

We've already encountered some of these characteristics in the big information developments that we've reviewed so far. The growing power of pictures, as evidenced by the rise of Tumblr and Pinterest, and the embarrassment that the broken guitar video on YouTube caused to United Airlines, are a classic example of a developing *pattern*. Graphs don't always go in the same direction for ever, so the suggestion that the social media investment bubble may be about to burst is an example of the *counter-cyclical*. The fact that big data and analytics don't seem to be living up to their promises, despite the fact that vendor after vendor continues to come out with new solutions, suggests that these two phenomena are currently subject to the *bandwagon effect*. And the likelihood that more and more intrusive analytics will provoke tougher privacy regulation is an example of *backlash*.

Now here are some more that we haven't looked at so far – beginning with…

Parallel developments

For many years, the legal, regulatory and tax segment of the information market has been dominated by Reed Elsevier's LexisNexis and Thomson Reuters' Westlaw (with the Practical Law Company – PLC – as a third player). But now this effective duopoly is being challenged by not one but two additional players: a revivified Wolters Kluwer and a complete newcomer Bloomberg Law (a new division of the eponymous business news and financial trading company). Both went on the acquisition trail last year. Wolters Kluwer bought statutory representation service provider National Registered Agents Inc, risk management specialist FRS Global and legal information specialist LexisNexis Deutschland. Bloomberg had previously always preferred organic growth to acquisition – but it purchased research and analysis company the Bureau of National Affairs and the American government data publisher Eagle Eye (as well as the business magazine *BusinessWeek*) [19].

Do these two parallel developments presage a serious challenge to LexisNexis and Westlaw? Wolters Kluwer has certainly indicated that it thinks its competitors over-charge, so in due course these newcomers may represent a better deal for legal information purchasers, and as such are worth keeping an eye on.

Straws in the wind

Document abstracting has always been a core activity of information and library services, and attempts to automate the abstracting process have so far met with limited success. But now here comes sixteen year old Nick D'Aloisio, a student at King's College School in Wimbledon near London, who has invented a viable abstracting application called Summly. It doesn't always work too well yet; the results are variable. But his app has been downloaded over 100,000 times, it's impressive enough to have attracted the attention of venture capitalists in Silicon Valley, several companies have enquired about licensing his technology, and one blogger has hailed him as a genius on a par with Google's Larry Page and Sergey Brin. D'Aloisio has all his adult life ahead of him, and this is unlikely to be his only achievement. So if part of your job is to write abstracts as a means of reducing information overload – watch out [20].

Counter-intuitive developments

Let's end with a slightly more optimistic exemplar from the library and information professional's point of view. Conventional wisdom holds that print on paper will continue to decline inexorably as tablets and e-readers take the place of printed newspapers, magazines and books. The forest products research body RISI has estimated, for example,

that 20% less paper will be needed for magazines alone over the next 15 years. But in a small experiment recently, the University of Oregon's School of Journalism discovered that people who read news stories in print remember significantly more detail than those who read the same stories using screen-based media [21].

The findings are backed up by the technology analyst Gartner, which found that print was still more readable than text on a laptop. Quality on tablets and e-readers was now comparable with print, it added, which should be an incentive for manufacturers to improve their readability still further. But, launching a European edition of *Forbes* magazine about a year ago, Steve Forbes asserted that print still allowed readers to deal with stories in a much more thorough way, and Forbes's chief revenue officer Kevin Gentzel clinched the issue with a survey showing that readers still turned to the printed word 'to make better business decisions' [22].

So, no matter how much pressure you may be under from both budget holders and users to reduce your print stocks in favour of their electronically delivered versions, the moral may be: Think counter-intuitively and don't pulp your paper just yet.

Why should we care?

Why should information and library professionals care about developments such as these? Surely they're way beyond our pay grade, as well as taking us out of our comfort zone. But such developments – or equivalent ones that impact on the environments where we work, such as academia or the public sector – actually show that we can't afford not to care.

A recent report from the Economist Intelligence Unit, *Agent of Change: the Future of Technology Disruption in Business*, paints an apocalyptic picture. Big data will become a business in its own right, alongside business-orientated social networks, there will be much more data mining for behavioural insight and more computers that can learn by themselves. But the EIU's thinking goes beyond the technology alone. Mid-sized companies will be ousted by micro-entrepreneurs, middle managers will be replaced by analytics delivered direct to the front line, and customers will be a major source of innovation, it predicts. Crucially, though, there could be a disconnect between economic and employment growth; automation may create the wealth but will simultaneously threaten an even wider range of jobs [23].

There's a moral for us information professionals here, no less than for other workers: we too have to adapt if we want to remain useful. We must develop our transferrable skills, learn the habit of detecting significant developments, get into the risk management business…

And save people from embarrassment.

References

All the material for this presentation was sourced from VIP's LiveWire blog, to which Tim is a regular contributor.

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[4]   'Overlapping and at cross-purposes' - music to information professionals' ears? 20 March 2012
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[7]   Analytics and privacy – incompatible? 30 March 2012
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[12] How will the social media bubble burst? 27 December 2011
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