

TECH TRENDS 2013



CONTENTS

- P.04 | Intelligent design:
HOW PRODUCTS AND SERVICES
ARE GETTING TO KNOW US
- P.06 | Open-source:
HOW NEW MODELS ARE CHALLENGING
THE NATURE OF BUSINESS
- P.08 | From push to pull:
WHY INFORMATION OVERLOAD IS
CHANGING CONSUMER BEHAVIOR
- P.10 | The disruption of hardware:
HOW THE CLOUD IS CHANGING THE
BASIS OF COMPETITION
- P.12 | A brand of me:
HOW THE ONLINE ENVIRONMENT IS
MAKING THINGS MORE PERSONAL
- P.14 | The data agenda:
FROM PRIVACY CONCERNS TO
OWNERSHIP QUESTIONS

01

INTELLIGENT DESIGN: HOW PRODUCTS AND SERVICES ARE GETTING TO KNOW US

Much has been written on the subject of artificial intelligence. While the debate regarding the singularity (the technological creation of superintelligence) continues, there is little doubt that the products and services we use every day are becoming more intelligent in their design.

4

In particular, the incorporation of behavioral data (essentially, our past actions) is increasingly used to create products and services that are tailored around us at an individual level.

- » The Nest thermostat uses sensors and algorithms to detect when you're at home and to learn a personalized temperature schedule.
- » Siri attempts to move beyond voice recognition, using other data stored on your phone to increase the range of tasks it can fulfill.
- » EcoDrive collects data on emissions and fuel consumption to provide tips on reducing the environmental impact of your driving.
- » These innovations are trying to serve our future needs better by understanding and learning from our past actions.

Perhaps the most prominent examples of this incorporation of behavioral data have been in the fields of discovery and recommendation and, unsurprisingly therefore, also advertising.

Where we once relied on explaining our tastes to people in record stores for personalized recommendations, we now have access to a plethora of digital services (Amazon, Genius, etc.) offering to do the same. The ability of these services to instantly draw on your existing music collection and past behavior allows them to tailor recommendations around your individual tastes.

As data availability increases, the algorithms underpinning these products and services will become more complex. Rich (and largely untapped) sources of data include our environment (where we are, what we're doing) and our emotional state (reading our personality as well as our actions). The addition of this more nuanced individual data promises more sophisticated, personalized interactions.

The business opportunities are potentially huge. Taking content recommendation as a case study, as the

NO DATA

BEHAVIORAL DATA

CONTEXTUAL DATA

02

OPEN-SOURCE: HOW NEW MODELS ARE CHALLENGING THE NATURE OF BUSINESS

6

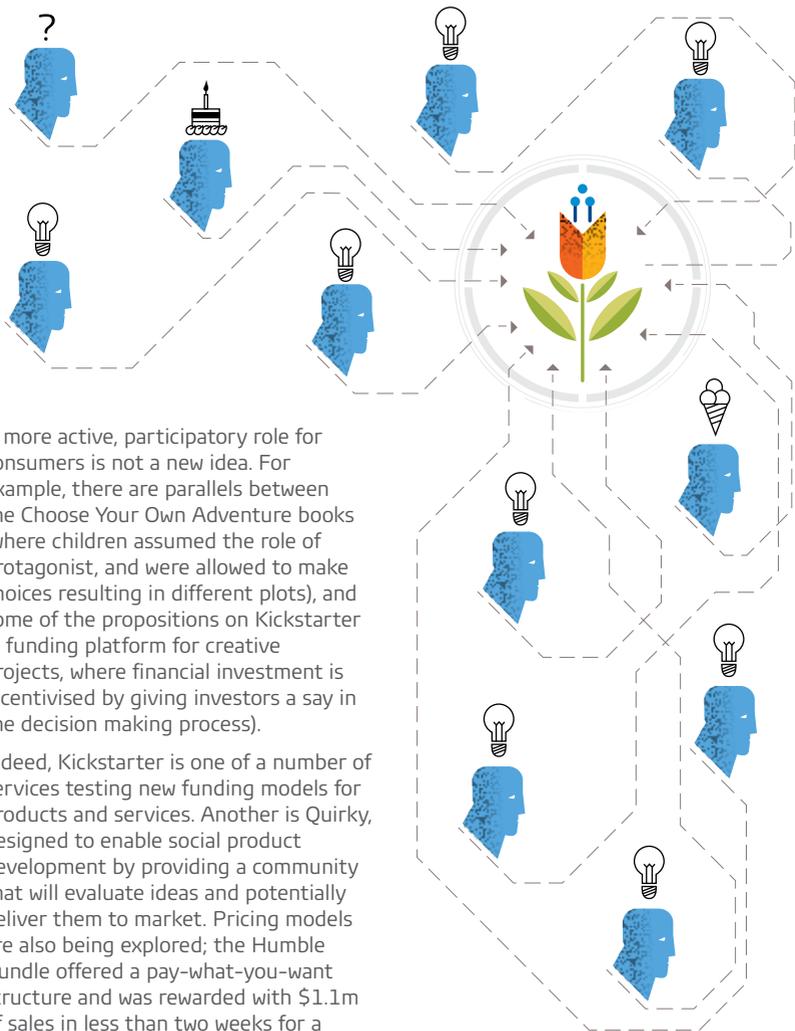
Hobbyists have always played an important role in the development of technology. From the Homebrew Computer Club (an informal group of technology enthusiasts in the seventies and eighties, many of whom went on to play important roles for Apple and Microsoft) to the modern day Maker Movement (who blend technological innovation with traditional DIY skills), they can often be found at the boundaries of what we consider possible. Most recently, a series of trends are coming together to empower the latter, potentially giving them as much disruptive potential as their Silicone Valley predecessors.

The disruptive impact of technology on traditional business is no longer a surprise. The music, film and publishing industries all had to navigate such changes with the emergence of the internet, where copyright infringement was often central to the narrative. The potential impact of the Maker Movement on the manufacturing industry, just as the first 3D printers come to market, could equally threaten the current form of patent system.

It's a particularly important time for 3D printers, given the historical precedent of the content industries. Though currently far from mainstream,

the scope for growth in 3D printing is huge. At a similar stage in its infancy Napster embedded an ideal of freely exchanging content that became hard to push back as the technology moved into the mainstream. Instead, business models fought, lost, and eventually had to evolve around the culture of piracy that Napster kick-started. It's not outlandish to suggest that the culture of participation and crowd-sourcing ingrained in the Maker Movement could therefore challenge the orthodoxies of traditional business.

"UNDERPINNING ALL OF THESE IDEAS IS THE INCLUSION OF THE CONSUMER; WHETHER IN THE DEVELOPMENT, PRICING, OR DISTRIBUTION OF THE PRODUCT."



A more active, participatory role for consumers is not a new idea. For example, there are parallels between the Choose Your Own Adventure books (where children assumed the role of protagonist, and were allowed to make choices resulting in different plots), and some of the propositions on Kickstarter (a funding platform for creative projects, where financial investment is incentivised by giving investors a say in the decision making process).

Indeed, Kickstarter is one of a number of services testing new funding models for products and services. Another is Quirky, designed to enable social product development by providing a community that will evaluate ideas and potentially deliver them to market. Pricing models are also being explored; the Humble Bundle offered a pay-what-you-want structure and was rewarded with \$1.1m of sales in less than two weeks for a collection of DRM-free eBooks.

Underpinning all of these ideas is the inclusion of the consumer; whether in the development, pricing, or distribution of the product. Coupled with the growth of the Maker Movement and 3D printing, which remove many of the traditional barriers to entry in the manufacturing space, and the ingredients for innovation, transformation and

disruption are largely in place. How the current patent system will adapt to these new open business models, and whether it can keep up, remain to be seen. As Chris Anderson, editor of Wired notes, 'The real revolution here is not in the creation of the technology, but the democratization of the technology.'

03

FROM PUSH TO PULL: WHY INFORMATION OVERLOAD IS CHANGING CONSUMER BEHAVIOR

8

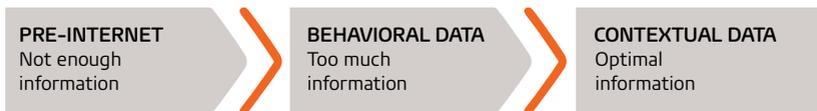
The internet changed the way we communicate. With email and the social feeds that followed, we increased the speed of our communications to instant. More recently, thanks to the shift to mobile, our exposure to these communications has proliferated, creating an 'always-on' society where interactions happen in real-time, rather than when we choose to fit them into our lives.

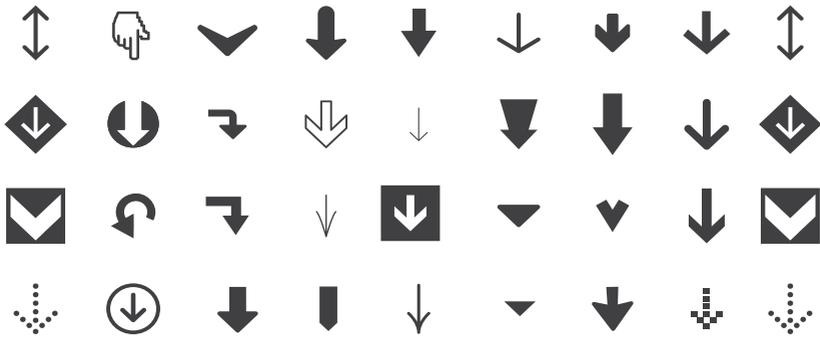
Even when we're not being demanded to provide real-time responses, we find our attention drawn to information streams as news breaks, conversations take place, and opinions are formed.

The internet has enabled a transition from not having enough information, but left us with too much. A range of innovative new products and services have responded to this overload, attempting to help us optimise these information streams and thus shaping the next stage in the evolution of information accessibility.

- » Instapaper provides an easy way to save and catalogue web pages you come across during the day, allowing you to come back to articles as and when you have time to read them
- » The Little Printer from Berg Cloud can automate a personalised newspaper print-out for your morning commute, incorporating your to-do list, news headlines, and messages from your friends
- » Undrip integrates and curates your social feeds, attempting to filter out anything that isn't directly relevant
- » iDoneThis provides a daily update of what everyone in a team or organisation achieved, trying to reduce the time spent micro-managing

The philosophical underpinning for these products and services has been loosely described as Slow Web thinking. The Slow Web movement takes its inspiration (and name) from the Slow Food movement, founded by Carlo Petrini in 1986. Where the Slow Food movement encompasses





a range of ethical and environmental considerations as a broad counterpoint to the growth of fast food, the Slow Web movement acknowledges the merits of the real-time web while suggesting that “users should not be slaves to it.”

There are historical comparisons to be made with these products and services. For example, there are parallels between the success of games like Draw Something and Words with Friends (which allow people to take turns against each other, alternately making moves in their own time) and play-by-post chess games that enable users to play each other despite being separated by geography.

However, there’s something unique to services like Instapaper and Undrip. They’re directly responding to a consumer need to shape information and communication around their lives, rather than vice versa. The increasing intelligence inherent in products and services (see other trends) will further enhance their ability to do so.

The implication for service providers is clear: content and information delivery systems should better fit within our needs and lifestyles. In communications with consumers, there’s a need to shift away from a focus on shouting loudest or most often (share of voice), and



instead think about how to converse with consumers at the right time and place.

With traditional consumption continuing to fragment and the growth of on-demand media, trying to integrate seamlessly with individual consumer lifestyles is no longer optional.

04

THE DISRUPTION OF HARDWARE: HOW THE CLOUD IS CHANGING THE BASIS OF COMPETITION

Two trends underpin the evolution of computing; increasing power and decreasing size. From the first moment that computers arrived in our homes, to the evolution of desktops and laptops, and now the shift to mobiles and tablets, mobility has always been a key driver in the evolution of hardware.

10

As smartphones become increasingly powerful, they're also faced with practical and physical limitations. For example, there's no way to make a touch screen device any smaller without impacting the user experience. One possible conclusion is that the next disruption in hardware is the removal of the screen altogether. Indeed, as services like Siri become more sophisticated, it's not impossible to imagine interacting with a device entirely through speech. More likely in the interim, given the importance still placed on viewable content, is that the basis of competition shifts away from the mobility of computing power altogether.

In this context, the employee-driven trend towards 'bring your own device' (BYOD) policies can be seen as an early indicator. As mobile devices are increasingly used to access data which isn't native to them, the need to carry multiple devices to access different streams (personal, work etc.) lessens.

Essentially, as we start to hold more of our information in the cloud, the future of personal hardware becomes about access rather than computation.

Another example is the launch of Amazon's new Silk browser. Utilizing a split architecture that allows the device to do some processing remotely via Amazon Web Services, Silk is seeking to employ the cloud to improve the user experience on hardware with lower technical performance.

It isn't hard to envision this trend extending across a wider range of hardware. Indeed, with the onset of

"AS WE START TO
HOLD MORE OF OUR
INFORMATION IN THE
CLOUD, THE FUTURE
OF PERSONAL
HARDWARE
BECOMES ABOUT
ACCESS RATHER
THAN COMPUTATION."

05

A BRAND OF ME: HOW THE ONLINE ENVIRONMENT IS MAKING THINGS MORE PERSONAL

12

As the pace of technological change picks up, market disruptions are becoming more frequent. It's hard for brands to keep up, but it can be equally hard for individuals. As innovative new products and services change the way we work, career paths and skill sets are changing with them; a job for life is becoming a thing of the past, and we are increasingly multidisciplinary by necessity.

The most visible impact of this trend is evident in the media and content industries. As the music, film, and publishing industries have been disrupted and the income of the artists involved has become less secure, many have looked to diversify their revenue streams in order to safeguard their livelihood.

For those with an individual brand (typically authors, musicians etc.) this can involve a number of facets, from embarking on speaking tours to selling their own content and merchandise. One key enabling factor in their ability to do so is the increasing ease of distribution.

The list of services harnessing technology to improve (and cheapen) distribution is long and getting longer. For example, in education:

1. TeachersPayTeachers is a platform for teachers to share (and monetize) lesson plans. Deanna Jump recently

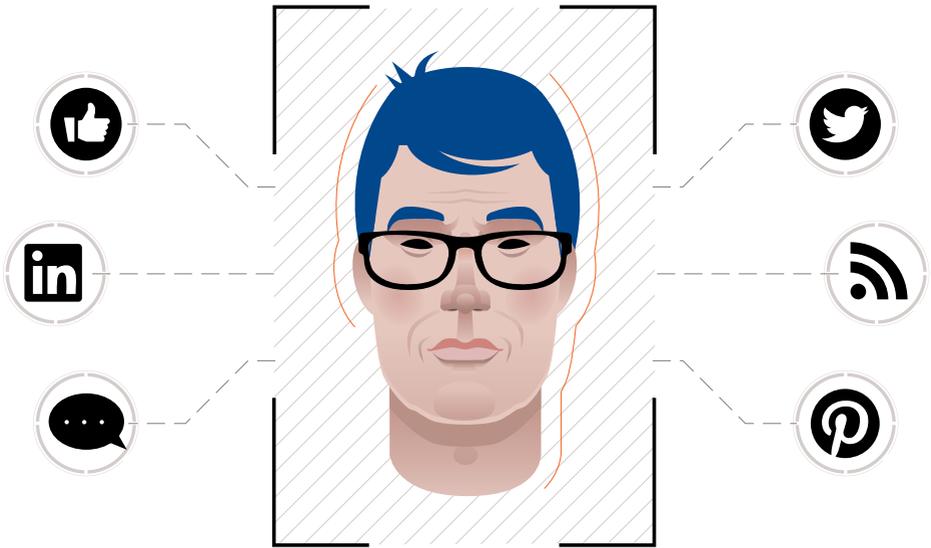
became the first to pass \$1 million in sales having built her personal brand to amass 17,000 followers on the service.

2. Coursera is a platform offering courses from leading universities in an attempt to "overcome the boundaries of geography, time and money".

While these distribution and qualification platforms can largely be seen as 'pull' effects (that is, we have access to them if and when we need to use them), there are also 'push' effects driving online personal branding. Crucially, as a result of our growing fondness for social media, we're progressively branding ourselves by accident.

The thought of potential employers trawling through our digital history may be a concern, but it also provides an opportunity to market ourselves better. Essentially, the traditional job application process is being supplemented by its online counterpart.

While we can expect these trends to apply primarily to more tech-orientated job roles at first, comparison with the history of social networking suggests that a trickle down to the rest of society will follow. There's already a market for purchasing Twitter followers and LinkedIn endorsements, indicating how seriously personal branding is being taken by some.



**TRADITIONAL
QUALIFICATIONS**



LinkedIn CV &
Coursera-type services

**TRADITIONAL
REFERENCES**



Followers,
Connections &
Endorsements

**TRADITIONAL
INTERVIEW**



Interactions,
Comments
& Opinions

It is debatable what impact this will ultimately have on our current economic structure. It's certainly hard to imagine the disruption of our education system or a working life that revolves around multiple projects rather than a single job, and yet, increasingly, the preconditions for such disruption are in place. If the history of the Internet has told us anything, it's not to underestimate its inherent capacity for driving significant societal change.

The opportunity for business is primarily in enabling this Brand of Me. The market for purchasing Twitter

followers demonstrates that there is value in creating a more trustworthy social currency. There are also issues to be solved in discoverability. In a global workforce, with almost no limits on distribution, the amount of data and content available is going to increase exponentially. Helping individuals to cut through this information and put themselves in front of an engaged audience is going to be even more valuable than it was in the heyday of the traditional record, film and publishing industries.

Data privacy concerns have been high on the technology agenda for some time. The success of business models based on monetizing personal data suggests these concerns are yet to influence consumer behavior significantly, but there has also been widespread acknowledgement that such businesses need to communicate better what data they're collecting and how it's being used.

The collection of our personal data is both enabled, and necessitated, by the nature of our digital world. As more aspects of our lives shift online, the data produced (whether passively, through our online behavior, or actively through uploading photos etc.) increases exponentially. Monetizing this data drives the business model for many 'free' online services, and behavioral economics teaches us that a price point is hard to shift once it's been ingrained; these business models are here to stay.

Up to this point, the key difference between the online and the offline worlds has been the accessibility of this data. However, the evolution of technology means we can no longer draw a simple online vs. offline dichotomy in relation to privacy concerns. For example, the growth of public (and private) closed-circuit television (CCTV) networks in many countries, coupled

with increasingly sophisticated facial recognition software, means that we're rapidly moving to a point where anonymity is an issue in our offline, as much as in our online, lives.

The most prescient questions regarding our personal data are no longer related to its privacy, but to who owns it in the first place. To explore these questions, we can draw three broad categories of personal data: (*Figure 01*).

By its nature, the last category is exempt from data ownership questions at an individual level. Whether offline or online, we can't hope to control what others project onto us, only how we respond to it. Instead, most ownership questions relate to where the distinction between the first two categories lies.

Part of the reason for these concerns is a tendency to take a reactive attitude to our personal data. Privacy questions have tended to emerge after we've given away control, not before. Consequently, there's a significant market opportunity for services that would encourage us to take a more proactive attitude as these questions become more important.

Essentially, if our individual data is already being monetized, then it's up to us to decide where and by whom. By taking ownership of it, through

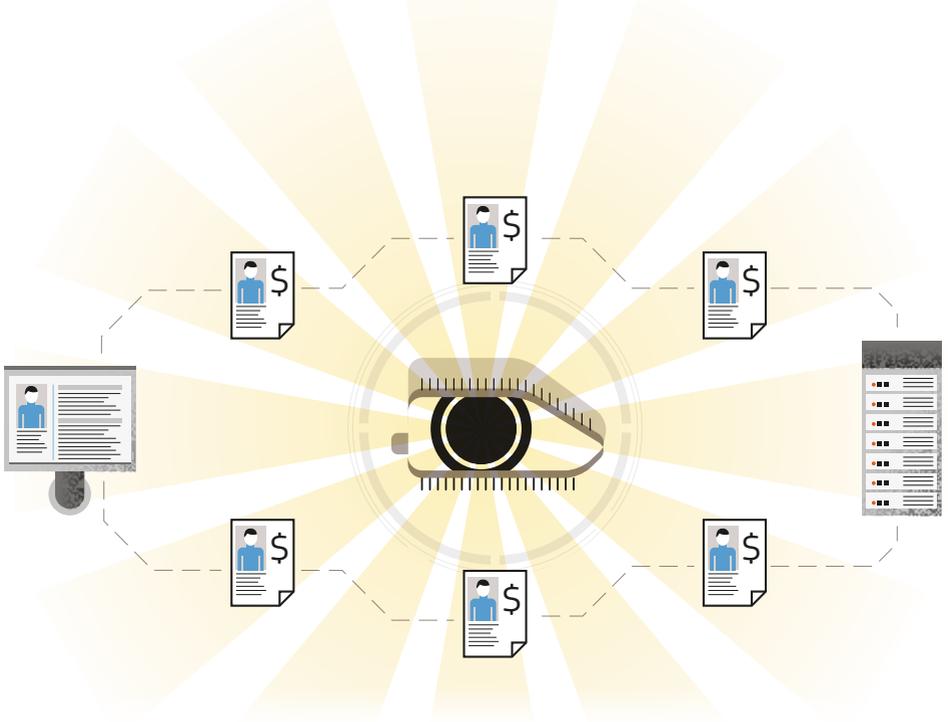


Figure 01

controlling our inherited and earned data, we could sell access to different elements of it as and when we choose to. Services such as Mydex are already seeking to create this more transparent dynamic between individuals and businesses. The opportunities for the latter are significant; enabling greater accessibility would allow for ever more tailored, personalized services.

In a world where consumers are taking ownership of their data, and proactively deciding when to use it, the impetus

will be on business to justify their need for it. Communicating the consumer benefits of collecting data will become more important, and transparency will be paramount. The opportunities are significant; where businesses have greater access, competitive advantage will increasingly be driven by leveraging this data. The potential to understand your customers is increasingly exponentially, but so too is the threat of your competitors understanding them better.

WE ARE GFK

We are one of the world's leading market research companies with over 11,000 experts in more than 100 countries around the world.

We understand that your future is based on big thinking. And that's our offer to you and every one of our clients. Whatever your size, and wherever you are.

For more information please contact
techtrends@gfk.com