the futures foundation
engaging all Australians in creating a better future...

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# FUTURE NEWS

TO CONNECT, TO INFORM AND TO INSPIRE

## IN THIS EDITION



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# State of Australian Cities 2013

## An urban innovation response

Adelaide's riverbank precinct, when realised, will comprehensively enliven, connect and beautify an underutilised asset in the city.

Following the launch of the State of Australian Cities Report by the Federal Government on 30 July 2013, it is worthwhile reflecting on the fact that whilst Australian capital cities still ranked quite highly in a number of international liveability indexes, there are a number of pressing trends that will have an important impact on our cities competitiveness into the future.

Some key points from the report and Minister Albanese's address include:

- The liveability of Australian Cities will be affected by how their sustainability is managed.
- Heatwave-related deaths are predicted to more than double in the next 40 years as a result of climate change, ageing population and population growth. "The overriding evidence is that our cities are getting hotter," said Mr Albanese. "Heatwaves are our biggest natural killer, well ahead of fire and flood." Congestion was a growing issue in Australian cities, and was predicted to cost AUD20.4 billion a year by 2020. Perth, Melbourne and Sydney had seen increasing congestion, whereas it had decreased in Adelaide, Brisbane and Canberra. Of 123 world cities, Sydney ranked as the seventh most congested.
- The minister noted that "The structure of our cities has an enormous impact on productivity: access to transport links, the changing structure of our employment, settlement and mobility all play a part in determining how well our cities function economically".
- Transport accounts for 40 percent of national energy use and 42 percent of average household greenhouse gas emissions.
- Areas with dense mass transit networks and residents with high income often coincide. Thus, those using rail and ferry services in particular have higher average incomes than those using other transport modes.
- The proportion of journeys to work made by bicycle is now the highest it has been in 40 years.

What is clear from the above is that urban prosperity in Australia is being challenged by the side-effects of success, including issues such as traffic congestion, resource scarcity and escalating housing costs. The enormity of the cost impact on business and communities is only now being realised and is not sustainable.

These are hard but not intractable problems and unfortunately leadership from the built environment professions regarding the thinking required around integrated, design led solutions for solving and resolving complex problems in the cities or precinct scale development space is sadly lacking. Few organisations or perhaps more accurately "professions" have the capacity or understanding of the issues to present a credible value proposition to Government, the marketplace and the broader community.

The solution lies with an ability to understand the nature of complexity and the fact that there is always an awful lot of grey to navigate. The world doesn't tend to operate in black and white (or linear) concepts very often, but this tends to be the methodology or approach undertaken to solve the challenges we face and professional services organisations need to shoulder the majority of the blame for such an approach.

The opportunity here is to explore a range of alternate business models and collaborations with complimentary professional organisations; and leadership of such a model is particularly well suited to the architectural profession. Utilising design thinking to solve complex problems, architects can create mixed-use buildings and people friendly business precincts to address these impacts and deliver key outcomes which would include; improved productivity, competitiveness, liveability and sustainability. This could be achieved through a combination of applied research, corporate strategy and business case development using the harnessed creativity of a multi-disciplinary design team representing all aspects of the built environment in support of amenity, liveability, productivity and sustainability within our urban settings.

Here are two ways that architects can respond to challenges such as those highlighted in the report, through application of the internal skills and resources in addition to economic and

# State of Australian Cities 2013

transport planning skills integrated as part of Urban Innovations, which Woods Bagot define as: integrated design solutions that maximise value to the built form while minimising risk to future urban resilience.

### Biophilic Urbanism

This is a term used to recognise our basic human desire for connecting to nature or green infrastructure. Biophilia is an active climate change adaptation strategy that aims to address and correct the dire consequences associated with the collision between the current shape and make-up of our urban environments and future climate change. By combining biodiversity challenges with the threat of future climate change, it is possible for our cities and precincts to be planned, designed and built to take account of a number of our adaptation challenges, in particular those associated with water, rising temperatures and food production. Adherence to the principles of Biophilic Urbanism will provide benefits to the community in all future development and redevelopment scenarios through possible market gardening, passive cooling (via reductions in heat island effect), reduced greenhouse emissions, improvements in human health and productivity, improved stormwater management, opportunities for carbon bio-sequestration and of course, increasing biodiversity.

### Land Use and Transport

The provision of liveable, sustainable and productive urban environments is enhanced through a shift away from car dependence. The transition from roads and replacement with alternate transportation means (walking, cycling and rail) not only provides for a greater movement of people (in the case of rail) but also increases the opportunity for active travel benefits (health and productivity improvements through walking and cycling) and increases the availability of land for other uses (value uplift). The adoption of "car free" zones and a focus on alternate transportation connections within our precinct masterplans encourages the use of active modes such as walking and cycling and public transport modes (buses, light and heavy rail) for improved health and productivity outcomes. Parking could then be provided at these public transit connections or the precinct perimeters, to keep the interior of the site free of cars and conducive to placemaking activities and increasing biodiversity (plants and animals) through Biophilic Urbanism (as discussed above).

The State of Australian Cities Report can be read as a call to action for architects intent on changing our urban environment for the better through an integrated approach to architecture, design and urban planning, with the statistics and research contained within providing a foundation on which to build better cities.

State of Australian Cities 2013 was launched by Deputy Prime Minister and Minister for Infrastructure and Transport, The Hon Anthony Albanese MP, on 30 July 2013. The report brings together current research, including newly released data from the 2011 Census, to present a comprehensive snapshot of Australian cities. The report is available here: https://www.infrastructure.gov.au/infrastructure/mcu/soac/index.aspx

Department of Infrastructure and Transport • Major Cities Unit

Table 3-9 Congestion in selected capital cities, 2013

| City | Congestion | Morning peak | Evening peak | Delay per hour driven peak period | Congestion change 2011 to 2012 |
|---|---|---|---|---|---|
| Sydney | 33% | 70% | 67% | 40 mins | Increase of 1% |
| Perth | 30% | 55% | 55% | 33 mins | Increase of 4% |
| Melbourne | 28% | 56% | 54% | 33 mins | Increase of 1% |
| Adelaide | 28% | 50% | 45% | 28 mins | Decrease of -1% |
| Brisbane | 25% | 45% | 50% | 28 mins | Decrease of -1% |
| Canberra | 18% | 41% | 34% | 22 mins | Decrease of -1% |

Note: Percentages refer to the increase in overall travel times when compared to a free-flow situation. For example, a congestion level of 12 per cent corresponds to 12 per cent longer travel times compared to a free-flow situation. Delay in minutes per hour driven during morning and evening peak times is as compared to free-flow situations. For example, 22 minutes delay per hour at peak times indicates that a one-hour journey driven at free-flow times will take an additional 22 minutes at peak times.

Source: Tom Tom International 2013

Darren Billsborough is Director of Urban Innovation at global architecture firm Woods Bagot, based in the Adelaide studio. He is also an Adjunct Professor of Sustainability at Curtin University Sustainability Policy (CUSP) Institute and a Director of the Green Building Council of Australia. Darren defines Urban Innovation as the provision of integrated design solutions which maximise value to built form and minimise risk to future urban resilience. His role within Woods Bagot is aimed at delivering on this promise by identifying and realising the opportunities that emanate from precinct and city scale urban developments.

Darren will also be speaking on 27 February as part of the 2014 Futures Forum series in Melbourne. See below for more details.

**For two additional perspectives on the future of cities:**

- The Futures Studies Research Journal has recently published a working paper by an adviser to the OECD Urban Land Institute and fellow of the Brookings Institute. The paper is titled: "The Future of cities, the role of strategic planning" and a copy can be obtained by sending an email to **info@futuresfoundation.org.au**.
- New York based research company PSFK have also published a report by the same name. The chapter headings in their report are entitled: Maximised Space, Sensible City, Citizen Sourced, Greenscaping and Urban Canvas. Again, a copy can be obtained by emailing info@futuresfoundation.org.

# 2014 Futures Forum Series

The 2014 Futures Forum series will kick off on Thursday 27 February in Melbourne.

Each month an invited guest and an audience of no more than 25 will come together to discuss something which will have a significant impact on Australia's future.

The theme for 2014 will be: "The role of ..... in creating Australia's future", and the forum series will begin with the author of the lead story of this edition of Future News – Darren Billsborough exploring the role of cities in creating Australia's future. Guests for all 10 forums are introduced below.

Futures Foundation members are able to book for any or all forum sessions immediately by logging in to the website and completing the on-line enrolment form. If any places remain, registration by non-members will be made available one month prior to each session. The member attendance cost is $20.00 (including GST) and non-members pay $50.00 (plus GST).

The presentation by the invited guest is audio recorded and uploaded as a pod cast which members can access by logging into the website.

Thanks to Group Director Steve Shepherd the 2014 Forum series will be hosted by Randstad Australia at their offices in the Rialto Towers in Collins Street Melbourne.

## Schedule for the 2014 forum series

### Thursday 27 February – Darren Billsborough

***The role of cities in creating Australia's future***

Darren Billsborough is Director of Urban Innovation at global architecture firm Woods Bagot, based in the Adelaide studio. He is also an Adjunct Professor of Sustainability at Curtin University Sustainability Policy (CUSP) Institute and a Director of the Green Building Council of Australia. Darren defines Urban Innovation as the provision of integrated design solutions which maximise value to built form and minimise risk to future urban resilience. His role within Woods Bagot is aimed at delivering on this promise by identifying and realising the opportunities that emanate from precinct and city scale urban developments. He wrote the lead story in this edition of Future News.

Australian cities face two challenges and our future urban developments need to adapt to these challenges. Firstly there is the environmental challenges of climate change and resource constraints. Secondly each city faces increasing pressure to maintain the physical and psychological well-being of their occupants in the face of growing population and health risks.
The trend toward increased densification in Australia has brought with it a subsequent focus on liveability, sustainability and productivity (as per the national urban policy) as primary objectives pointing towards class leading urban developments; and given that it is our cities that power our economy, producing at least 80 per cent of our GDP and housing almost eight out of every ten of us, this has seen a subtle shift in thinking beyond individual projects to impacts at a precinct scale.

### Thursday 27 March – Dr Geoff Davies

***The role of transformed economics in creating Australia's future.***

Geoff Davies is a Senior Research fellow at the Australian National University in Canberra. Originally trained as a geophysicist and still publishing in this area, he is the author, in 2004, of "Economia – new economic systems to empower people and support the living world", and more recently of "The nature of the beast – how economists mistook wild horses for a rocking chair".

His interest in economics grew from his realisation that the assumptions and predictions of standard market theory bear little relationship to the behaviour of real economies. By explaining this in accessible language, speaking as a scientist, he hopes to empower the many people who suspect that something is seriously awry.

### Thursday 10 April – Robyn Williams

***The role of science in creating Australia's future***

**(NOTE the date change, Robyn is not available on the last Thursday of the month).**

Robyn Williams is the host of Radio National's Science Show which will shortly broadcast its 2,000th episode. Originally educated in England where he admits to spending as much time acting as studying, he made guest appearances in The Goodies, Monty Python's Flying Circus and Doctor Who before turning to increasing everyone's understanding and appreciation of science. He chaired Australia's much lamented Commission for the Future and was named a Living National Treasure in 1987.

### Wednesday 29 May – Dr Adam Bandt MHR

***The role of the Federal Government in creating Australia's future.***

Adam Bandt is currently serving his second term as the Federal Member for Melbourne and is the only representative of the Australian Greens in the House of Representatives.

Adam trained as a solicitor and barrister and practised in industrial relations before joining Parliament in 2008.

(Please note that Adam has agreed to this date prior to the announcement of Parliamentary sitting dates for 2014. It may be necessary to change this date)

# 2014 Future Forum Series — Schedule

## Thursday 26 June – Charles Brass

***The role of work and jobs in creating Australia's future***

Charles Brass founded the Future of Work Foundation in 1991 and has been a regular commentator on issues to do with the future of work and jobs ever since.

What are we to make of an era in which the percentage of secure full-time jobs is steadily decreasing in favour of a diverse range of contingent employment options, at the same time as politicians of all persuasions continue to promise job creation as part of their election platforms? How will people participate in the future if they can't find the jobs they need to earn the money they have to spend if we are to have a viable economy?

## Thursday 31 July – Dr David Warner

***The role of education in creating Australia's future.***

David Warner is the recently retired principal of Eltham College, and the author in 2006 of "Schooling for the Knowledge Era". He has worked as a teacher and principal in both the private and independent school sectors, and as a researcher and labour market analyst in TAFE and higher education in Australia and internationally.

In his introduction to Schooling for the Knowledge Era, Professor Brian Caldwell laid out the challenge for education in Australia's future: "What must it take to demonstrate that schooling for the 21st century in a knowledge society must differ in important ways from schooling in the 19th and most of the 20th century in an industrial society? These differences extend to pedagogy, curriculum, technology, facilities, organisational structure and connections between the school and the wider community." This calls for nothing less than a new 'education imaginary' which David will explore in his presentation.

## Thursday 28 August – Stephen Yarwood

***The role of Local Government in creating Australia's future.***

Stephen Yarwood became the youngest Lord Mayor in the history of Adelaide when he was elected in 2010. He first joined the Adelaide City Council in 2007after nearly 20 years working as a town planner. Stephen has an MBA as well as post-graduate qualifications in Regional and Urban Planning and Environmental Studies. He has lectured in planning and management in several countries, as well as studying future cities in Tsukuba, Japan's technology city.

2014 Futures Forum Series Hosted by randstad

## Thursday 25 September – Steven Cork

***The role of resilience in creating Australia's future.***

Dr Steve Cork is an Australia21 fellow and Leader of its resilience project. He is the lead author and editor of "Resilience and Transformation – Preparing Australia for Uncertain Futures" published by the Australia21 project in 2010. He is currently a research associate in the Centre for Water Economics, Envi onment and Policy Research at ANU in Canberra after more than 20 years with the CSIRO.

When Australians talk about the future, the word "resilience" often is heard. But what does this word mean? Do we really understand its implications for the future? And if we understood it better, would we be in a better position to envisage and shape desirable futures and manage future risks? This presentation will explore these questions and other aspects of resilience and what they mean for thinking about, and creating, Australia's future.

(More information about the Australia21 project can be found at www.australia21.org.au)

## Thursday 30 October – Eric Beecher

***The role of the media in creating Australia's future.***

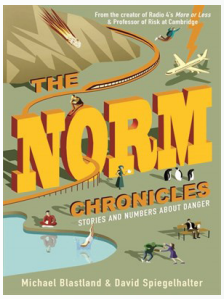
Eric Beecher is the Chairman of Private Media Partners which, amongst other projects, publishes the Crikey news site. Previously he was Editor-in-chief of the Sydney Morning Herald after a long career as a practising journalist. He has also been the Chair of a number of not-for-profit organisations such as the Lighthouse Foundation.

## Thursday 27 November – Tom Gutteridge

***The role of the arts in creating Australia's future - Cultural capital and how to accumulate it.***

Tom Gutteridge is the Artistic Director of Union House Theatre and former Artistic Director of Black Swan Theatre Company in Perth. He is a performance and multi-media creator, with credits including mainstage theatre and opera direction, sound design and composition, and dramaturgy across a range of media. Recently he directed the successful Australian tour of "Yes, Prime Minister".

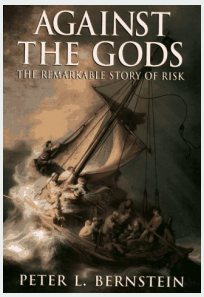
As we morph from being a Western culture into our own unique Eastern/Pacific hybrid, what role will the Arts play in making sense of increasing diversity, rapid change and shrinking resources in our society? Tom is currently working at the University of Melbourne where he is focussed on building a creative environment which more accurately reflects the demographics of contemporary Australia and which provokes emerging artists to question the sources of their ideas. He is interested in the importance of risk – in all its forms – in the development of judgement, confidence and purpose in young people.




# Book Review

***The Norm Chronicles: Stories and numbers about danger***
by Michael Blastland and David Speigelhalter – Profile Books, 2013

***Against the Gods: The remarkable story of risk***
by Peter L. Bernstein - John Wiley and sons, 1996




Risk Management. Two words which dominate thinking inside modern organisations (including governments), and their corollary 'avoiding danger' which spills over into our individual lives.

A quick search identifies over 900 books with risk management in the title. One without those specific words became something of a cult icon when it was published in 1996 (*Against the Gods: The remarkable story of risk*, by Peter L. Bernstein – see below).

Now two English authors (a journalist and a statistician) have combined to present a non-expert guide to danger, risk and chance under the title *The Norm Chronicles: Stories and numbers about danger*.

Their approach is to examine the risks in everyday situations (chapter headings include: infancy, accidents, vaccinations, sex, gambling, unemployment and surgery for example) through the eyes of three fictional characters (including the Norm in the title) who take quite different approaches to the risks they face.

The book begins by looking at the three different characters' responses to finding an unaccompanied bag on a train. One gets off immediately and walks to his destination. Another is rooted in fear, unable to move, until the owner of the bag retrieves it when she breathes a huge sigh of relief. The third character opens the bag, takes out what he believes to be valuable and leaves the rest behind.

Through these, and the many other stories in the book, Blastland and Spiegelhalter navigate their way skilfully through the human dimensions to risk and danger – things are as risky as we believe them to be – while keeping a clear eye on the actual numbers – what is the likelihood that a rogue bag on a train contains a bomb (over 30,000 bags per year are left on British trains and only one has ever exploded).

They point out that viewed at sufficient abstraction, things often happen surprisingly regularly: over a five year period the number of English men who fell from ladders varied between 42 and 56, and there are over 21 million English men. But this tells us virtually nothing about what will happen if we climb a ladder. As they put it: "from above, the course of human destiny is often clear. To individuals below, it is a maze of stories. It is as if there are two forces at the same time: one at the big scale pulling towards certainty, the other pushing individuals towards uncertainty" (p9).

Which is how they introduce and explore the concept of probability: "probability… begins with counting past events such as '20 per cent of men who died in recent years, died from heart disease'. It then uses this to predict a pattern. 'About 20 per cent will die from heart disease in future.' But then it goes a step further: from that general prediction it gives odds for what will happen to individuals. 'The risk or chance that the average person will die from heart diseases is therefore also 20 per cent…..' Thus it moves from past to present, from the mass to the individual."

The authors explain why such an apparently commonplace concept such as probability masks much mis-information and poor explanation (not to mention that the fact that a 20% risk of heart attack is seen by some as a disaster and by others as very liberating).

In an effort to make all kinds of risk comparable on a simple scale, they develop the concept of a micro-mort (MM) – ie a one in a millionth chance of something happening. So, if you ride a motor cycle for 35km on suburban roads you have spent one micro-mort (there is a one in a million chance that you will have an accident every 35 km you ride). Or, having a general anaesthetic converts to 10MM – ie one in one hundred thousand people who have a general anaesthetic die.

Micro-morts are for acute risks. For chronic risks they create the concept of a Micro Life – ie one millionth of an average human life span, or about 30 minutes. On this scale, smoking one cigarette reduces life expectancy by around 15 minutes, so a 20 a day smoker burns about 10 Micro Lives per day (ie they reduce their life expectancy by around 5 hours).

Using these two concepts they provide numbers for the various risks explored in each chapter. And they combine these with stories exploring how each of their three characters personally respond to these risks.

Their clear aim is "to help us all better understand risk", and how well they do this is (for me) neatly summed up in this paragraph: "…a 12 per cent risk of a heart attack is often communicated as 'out of 100 men like you, in 10 years we expect 12 to have a heart attack or stroke'. But there are not 100 men like you, and the probability is not yours. A more gripping metaphor might be to say 'of 100 ways that things may turn out for you over the next 10 years, in 12 of them you will have a heart attack or stroke'."

A much more scholarly, but still eminently readable, exploration of risk is "Against the Gods" by Peter Bernstein. From the first page, Bernstein locates an increased understanding of risk as crucial to human development:

"The revolutionary idea that defines the boundary between modern times and the past is the mastery of risk: the notion that the future is more than a whim of the gods and that men and women are not passive before nature. Until human beings discovered a way across that boundary, the future was a mirror of the past or the murky domain of oracles and soothsayers who held a monopoly over knowledge of anticipated events." (p1)

In fact, he considered the understanding of risk as being at the centre of what means to be a modern human:

> *"The ability to define what may happen in the future and to choose among alternatives lies at the heart of contemporary societies." (p2)*

Bernstein locates the beginning of a serious study of risk in the early Renaissance period (around the middle of the fifteenth century) – although he begins his book by looking closely at how ancient civilizations understood the world. His first five chapters uncover the history of human understanding or risk and risk management looking closely at gambling, probability and uncertainty. He tells this history through the personal stories of those who created it: Pascal, Fermat, Bernoulli, Bayes, Keynes, Fischer, Scholes and Black, von Neumann and the 'beautiful

**Continues on next page →**

# FUTURISTS IN ACTION

## Developing a Local Government Community Plan

Recently the futures foundation was contacted by officers of a local government authority who were contemplating developing a long-term community plan for their municipality.

Similar plans have been developed by a number of Australian councils (some facilitated through the futures foundation) and these officers had surveyed a number of other councils asking what they had done and why.

After collecting these responses they weren't sure they had found a model with which they were totally happy, and they asked the futures foundation to help them think through some alternatives.

Their key critiques of approaches taken by other councils included:

- the relatively small number of community members actually involved in creating the plan
- the relative narrowness of the final product (it often seemed more to be a reflection of the present, than a vision of the future)
- the speed of change often meant that the plan was redundant as soon as it was finished
- the lack of evidence that the plan had an impact on the ways in which councils actually operated

Notwithstanding these reservations, council officers believed that their community wanted something like a community plan, and also felt that a credible community plan would help make their day to day jobs easier. They also felt it would be easier to deal with various external agencies if council could point to a coherent and compelling, community-created vision for the future of the municipality.

They invited the futures foundation to interview a diagonal slice of more than 30 council staff (out of a cohort of just over 1,400 employees) asking:

- what a community plan meant to them
- what processes of community engagement and consultation they currently used, for what purpose and with what results
- what difference a coherent, compelling community plan might make to their role
- what involvement they would expect to have in the development of a community plan.

Arising from these interviews, and the futures foundation's previous experience in other municipalities, three options were presented to the executive team:

1. Make no attempt to create a new document. Instead expand and extend the range of communication and consultation which went into developing the existing 4 year council plan
2. Extend the current council planning time horizon (perhaps out 10 or 15 years) and invite interested community members (and council officers) to participate in a process culminating in a community vision statement for the municipality, say in 2030
3. Recognise the inherent uncertainty in the future, and embark on a process designed to flesh out alternative visions for the future of the municipality – and publish these alternative visions as thought starters whenever decisions with a significant potential future impact were being considered.

The first two of these options have been employed by many different councils in recent years (often employing quite different processes). The third has been used to generate alternative future scenario possibilities in various settings; but not, to our knowledge been undertaken by a local government agency in Australia.

At the time of writing, the council staff were still considering their options.

**Book Review continued:**

mind' of John Nash.

Through the work done by these people our understanding of probability and uncertainty has developed to the point where the computers we have created are able to monitor all our electronic communications and self-correct any errors in transmission as they occur.

Bernstein overlaps most clearly with Blaxland and Spiegelhalter when he devotes his ante penultimate chapter to the Israeli psychologists Daniel Kahneman and Aaron Tversky (authors of "Thinking Fast and Slow"). These psychologists have spent thirty years looking at the way human beings make decisions – noting along the way that we hate to lose more than we like to win, so we tend to be habitually risk-averse (or more accurately loss-averse).

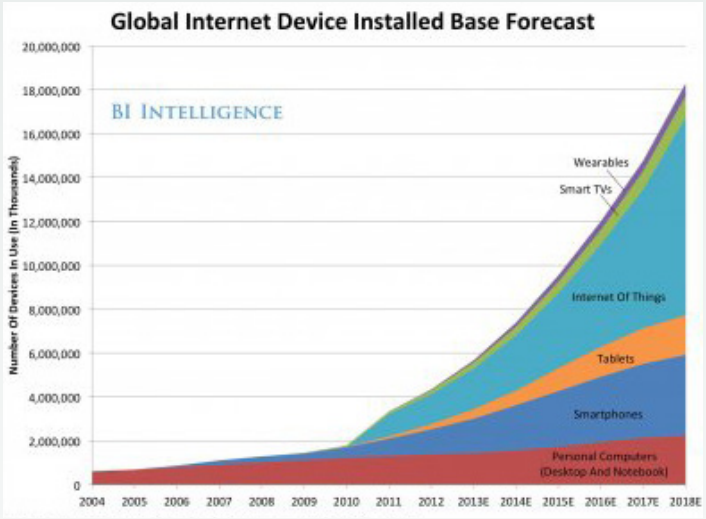
Bernstein's closing chapters focus on understanding and managing risks in financial markets – something which has become particularly relevant since the so-called global financial collapse of 2008.

Both of these books explore the mathematical and scientific dimensions of risk, uncertainty and danger. However, both also conclude that human irrationality is an unavoidable dimension which cannot be ignored. Both books help us understand our own irrationality a little better, but none of the authors believe the job is by any means done (and they quietly wonder if it ever will be).

Bernstein concludes: "The past seldom obliges by revealing to us when wildness will break out in the future" (p334), but three authors believe that human affairs will be significantly improved when proper attention is paid to understanding how the present and the past impact on the future.

# Signals in the Noise

## How big is *The Internet of Things* going to be? This big




This year sees a step-change in the development of the internet experts are calling the internet of things – the ability of devices such as thermostats to connect to other devices via the web.

The Internet of Things will account for an increasingly huge number of connections: 1.9 billion devices today, and 9 billion by 2018. That year, it will be roughly equal to the number of smartphones, smart TVs, tablets, wearable computers, and PCs combined.

### But why this year? Three reasons:

1. IP Addresses: A massive expansion of available IP addresses: the latest internet protocol (IPV6), with its address space of 128 bitsprovides a truly humongous 340 billion billion billion billion available unique addresses.

2. Bandwidth: 4G has created enough additional bandwidth_to cope with the explosion in data from objects such as smartphones and iPads. As 4G spreads, things will be even freer to talk.

3. Storage: storage-on-demand services via the “cloud” make storage cheap.

Thanks to Andy Pemberton from furthr.co.uk

For another look at the internet of things, see this article in the November edition of The Futurist magazine from the World Future Society: http://www.wfs.org/futurist/2013-issues-futurist/november-december-2013-vol-47-no-6/securing-cyber-city-future.

The full text of the article is available upon request from the futures foundation (send us an email to **info@futuresfoundation.org.au**) and from 2014 all members of the futures foundation will automatically receive a hard copy of The Futurist.