

From  
Chief Information Officer  
to  
Chief Innovation Officer

Graham McLeod  
Founder Inspired  
Chief Architect/Chairman Promis Ltd

“Get out of your cubicle and into the future!”

The world is changing more rapidly than ever before. Business models from just five or ten years ago are often obsolete. Change is inevitable. Change is scary. Rapid decisions backed by sound models and data are vital to exploit new opportunities while controlling risk. Too many architects are focussed internally. Too many are reactive. Too many cling to the geek speak comfort zone. We need to lead, but we need to understand the context of business today and the critical factors to get right. We need to connect the broad themes running through today's world with the structure of our businesses and the processes, applications, information and technology supporting them. We need to create agile and responsive organizations that adapt and that matter. Its a survival thing. This talk offers some insights and recommendations for how to proceed ...

The world is changing - faster than you think

Its is nearly all information, technology and network driven

Innovation is a survival issue

We are at the pivot

Rise to the challenge...

# Change Dimensions

Computing, Networks

Education

Intelligence

Manufacturing

Information Availability

Medicine

Social Media

Energy

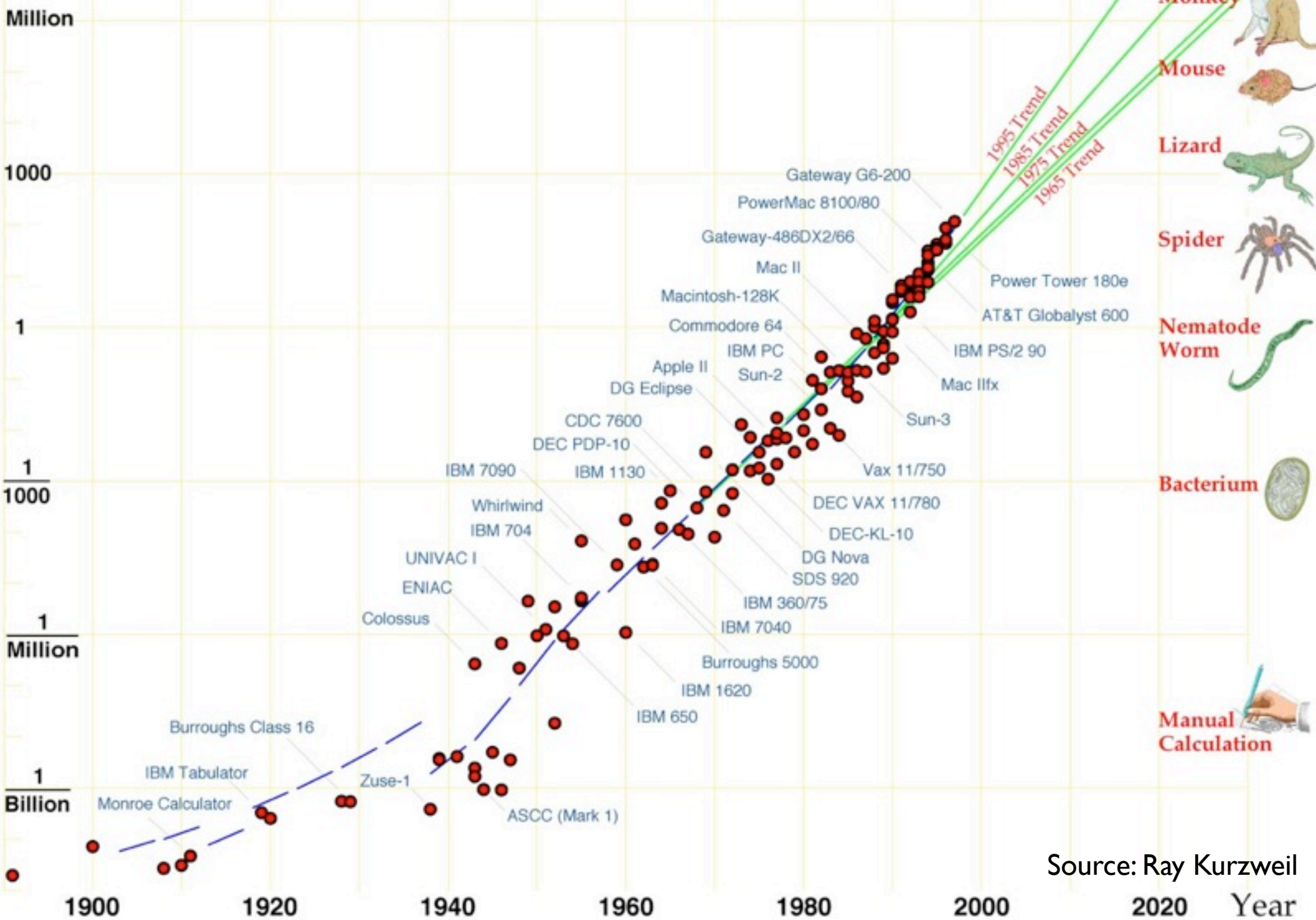
Publishing

Green Issues

# Evolution of Computer Power/Cost

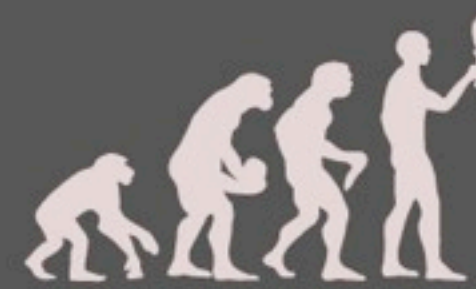
## Brain Power Equivalent per \$1000 of Computer

MIPS per \$1000 (1997 Dollars)

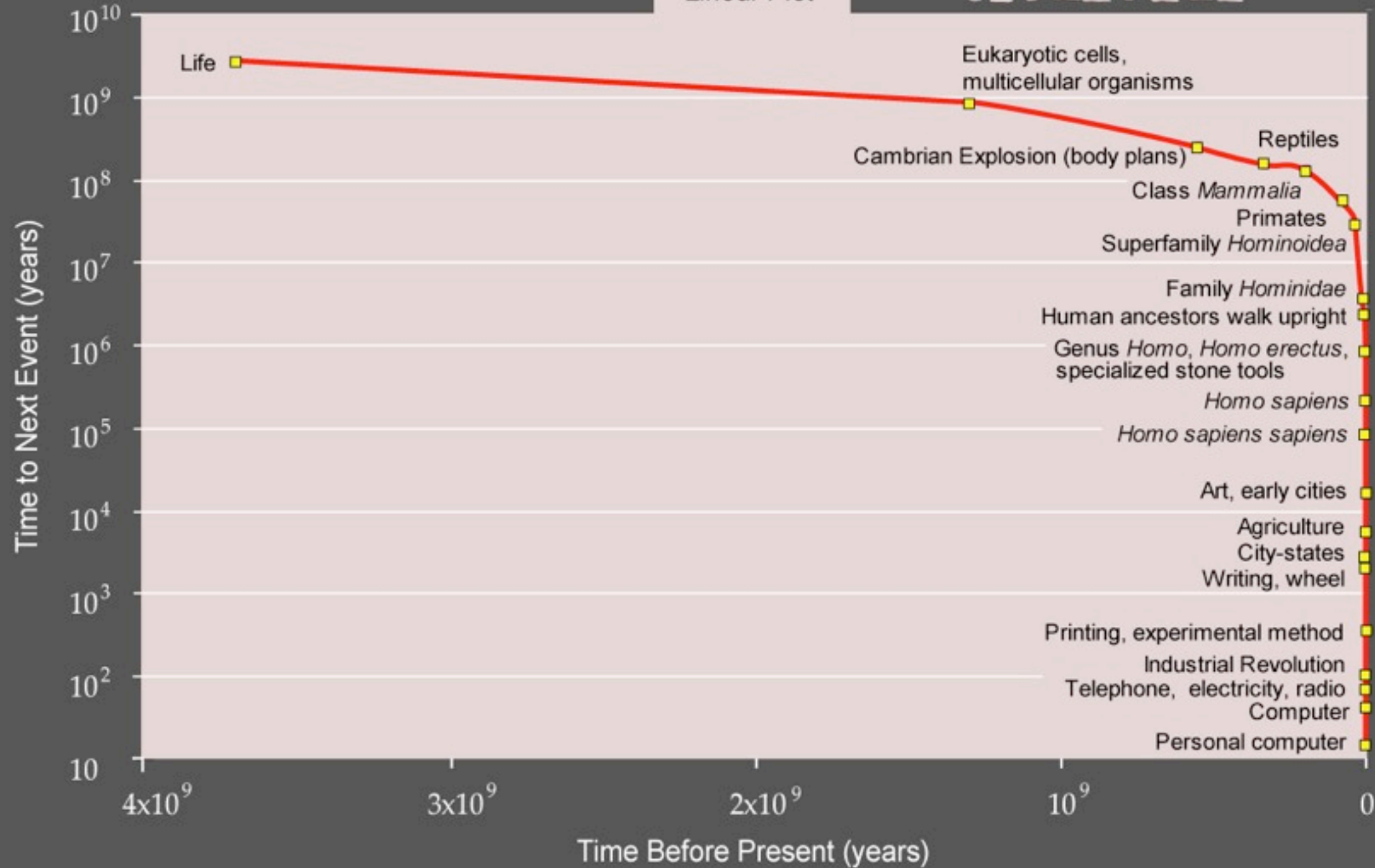


Source: Ray Kurzweil

# Countdown to Singularity



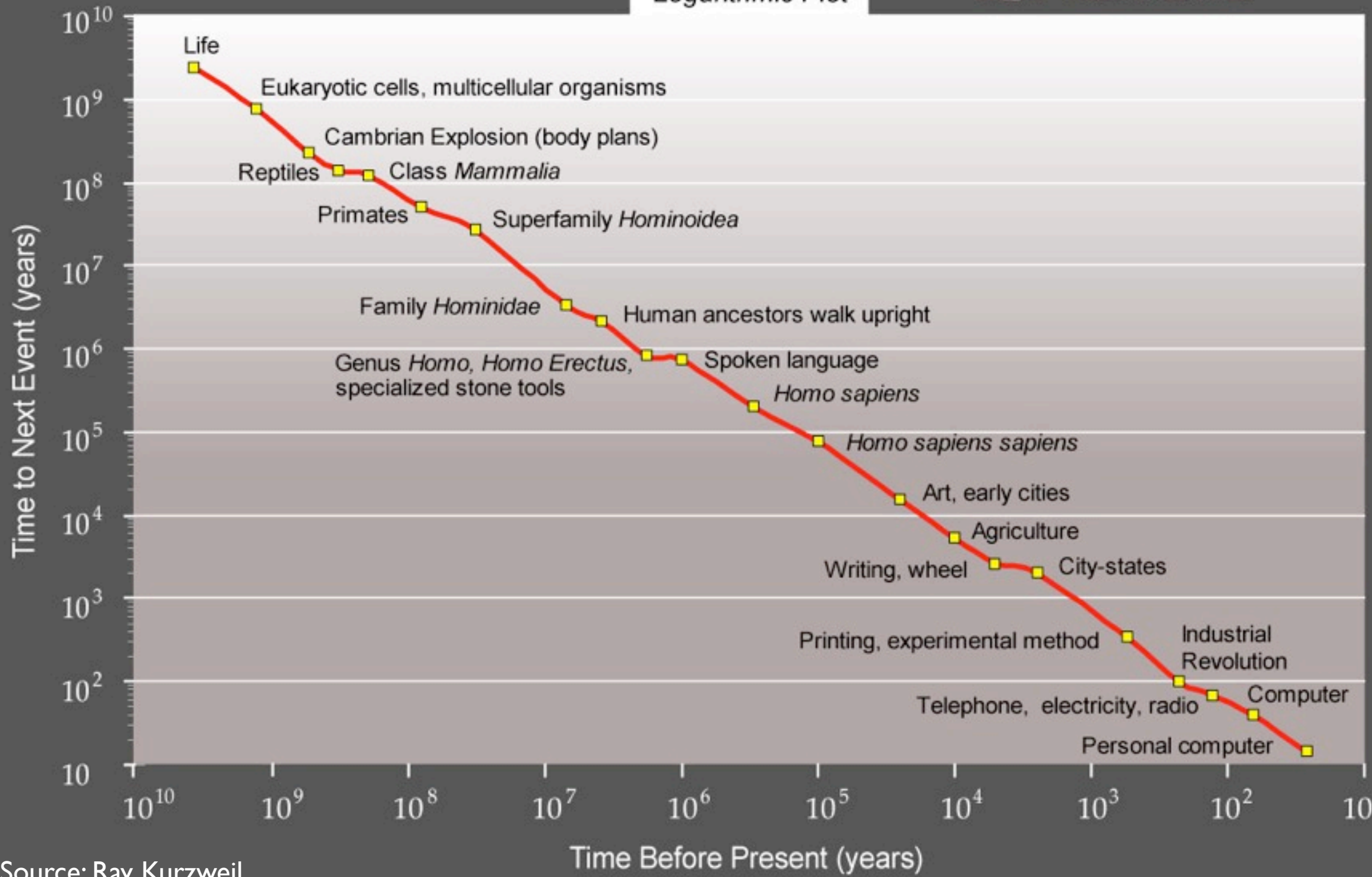
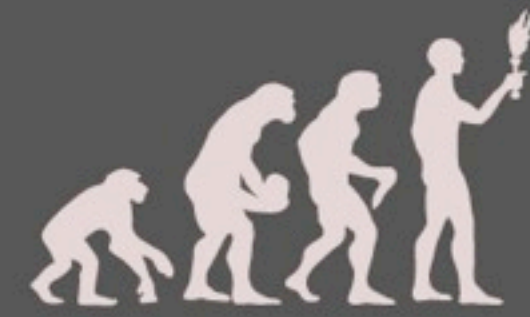
Linear Plot



Source: Ray Kurzweil

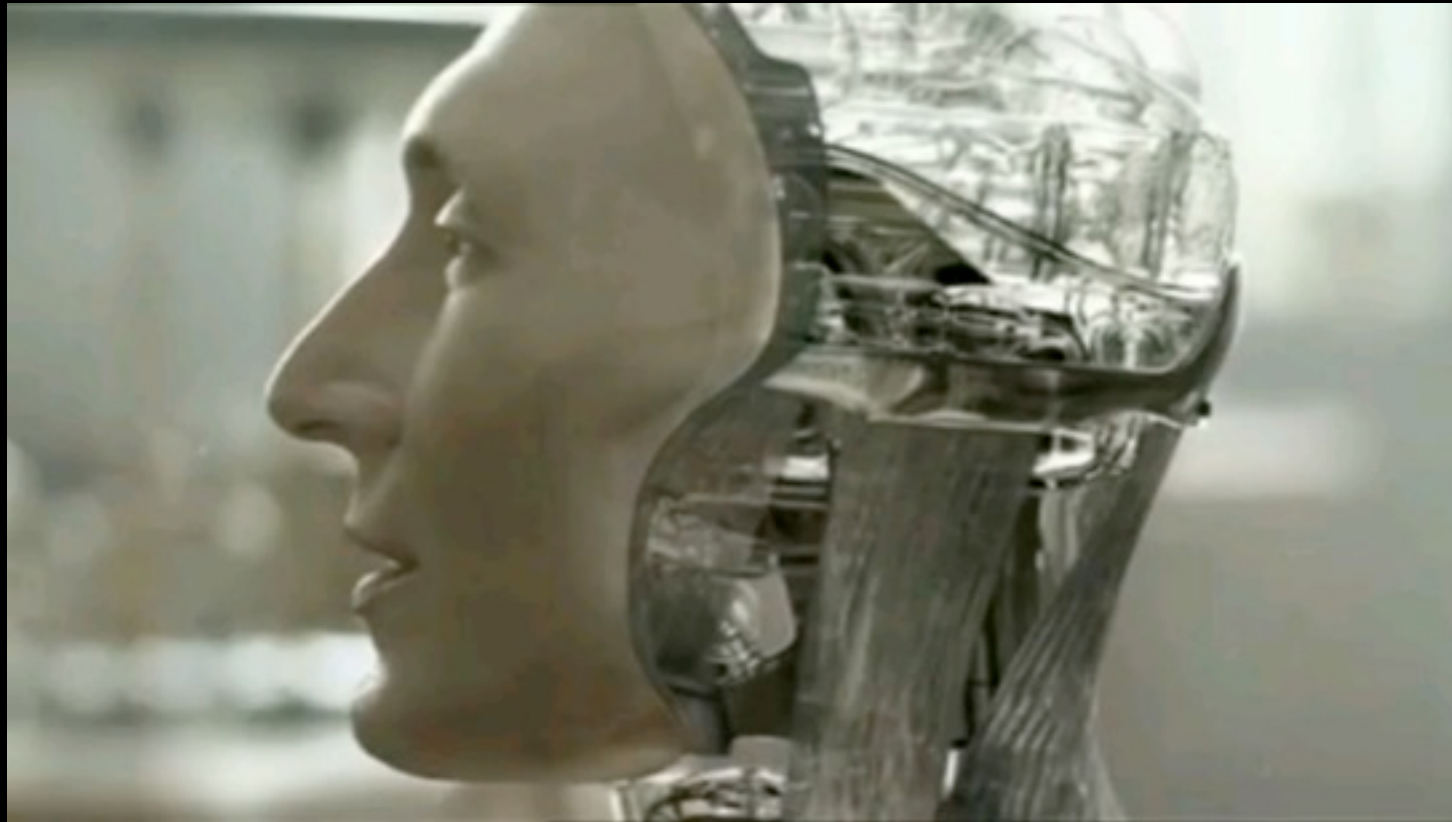
# Countdown to Singularity

Logarithmic Plot



Source: Ray Kurzweil

# Sentient Man



- \$1000 computer = human brain power by 2020
- Human level software by 2029
- Human Intelligence enhanced
- Human senses enhanced



# Social Media

>50% of World Population under 30

96% of Millennials have joined a social network  
Many consider e-mail passe

Facebook traffic > Google in US  
>50% of mobile traffic in UK

Social Media surpass Porn as #1 Internet activity

Now >200 Million Blogs

78% of consumers trust peer recommendations  
Only 14% trust advertisements



# Social Media

Obama

Wikipedia - 15 Million volunteer articles

Open Source Software, Books, Images, Designs, Hardware...

Linked In, Facebook, Twitter

Egypt



# Time to 5 Million Viewers/Users

Radio	38 years
TV	13 years
Internet	4 years
iPod	3 years
iPad	2-3 months

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**200 Million Users in <1 Year**

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**200 Million Users in <1 Year**

If Facebook were a country it would be third most populous

# Marketing

Mass Media, push, crude targeting

Search Era at Moment

Rapidly being replaced by Social  
Media

Which will be overtaken by Semantic  
Agents..



Swatch at New York Fashion Week

400 000 people reached via tweets

# Social Media

Powerful enough  
to bring down  
dictatorships

Powerful enough  
to kill corporates  
that aren't  
listening

[Juju's message to Mubarak](#)



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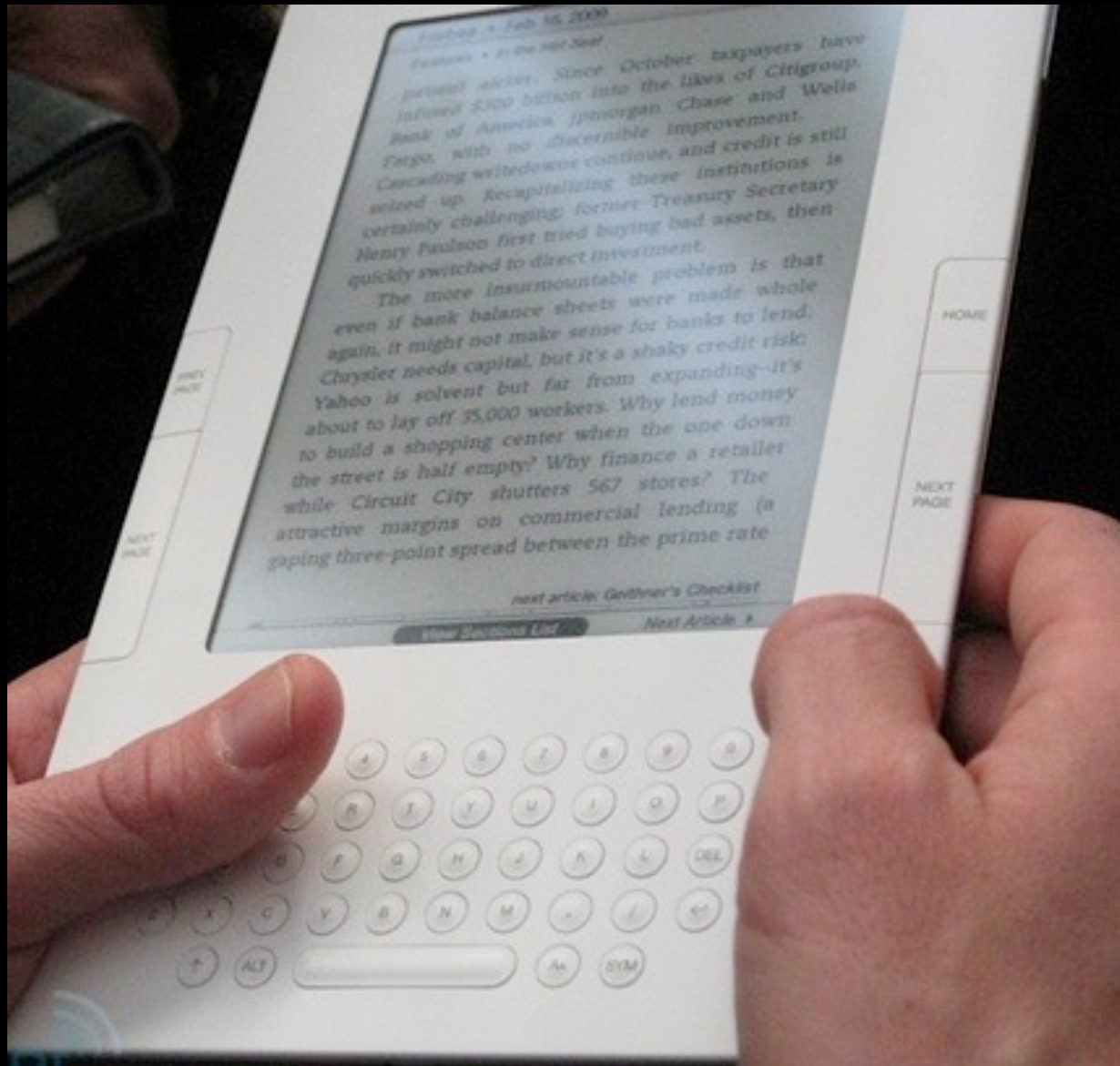
eBooks now outsell print books as of 2010 Xmas season

100 Million Books sold on iBooks in less than 1 year

24 of 25 top newspapers are experiencing record decline in circulation

Locally, all but 2-3 magazine titles in one major stable were unprofitable

Most music and movies are downloaded



# Education

Google has digitized 25 Million books & is now busy with museums

Harvard, Stanford, MIT lectures online for free

Youtube now 2nd largest search engine

Tablets replace textbooks, infiltrate classroom

Online students are outperforming classroom peers

TED Talks

Lynda.com

Google funding Singularity University



# Applications



Apple, Android, Nokia, Microsoft

Appstore: 350 000 Applications  
10 Billion Downloads

Gartner predicts 17.7 Bn for 2011

Shrinkwrap \$200

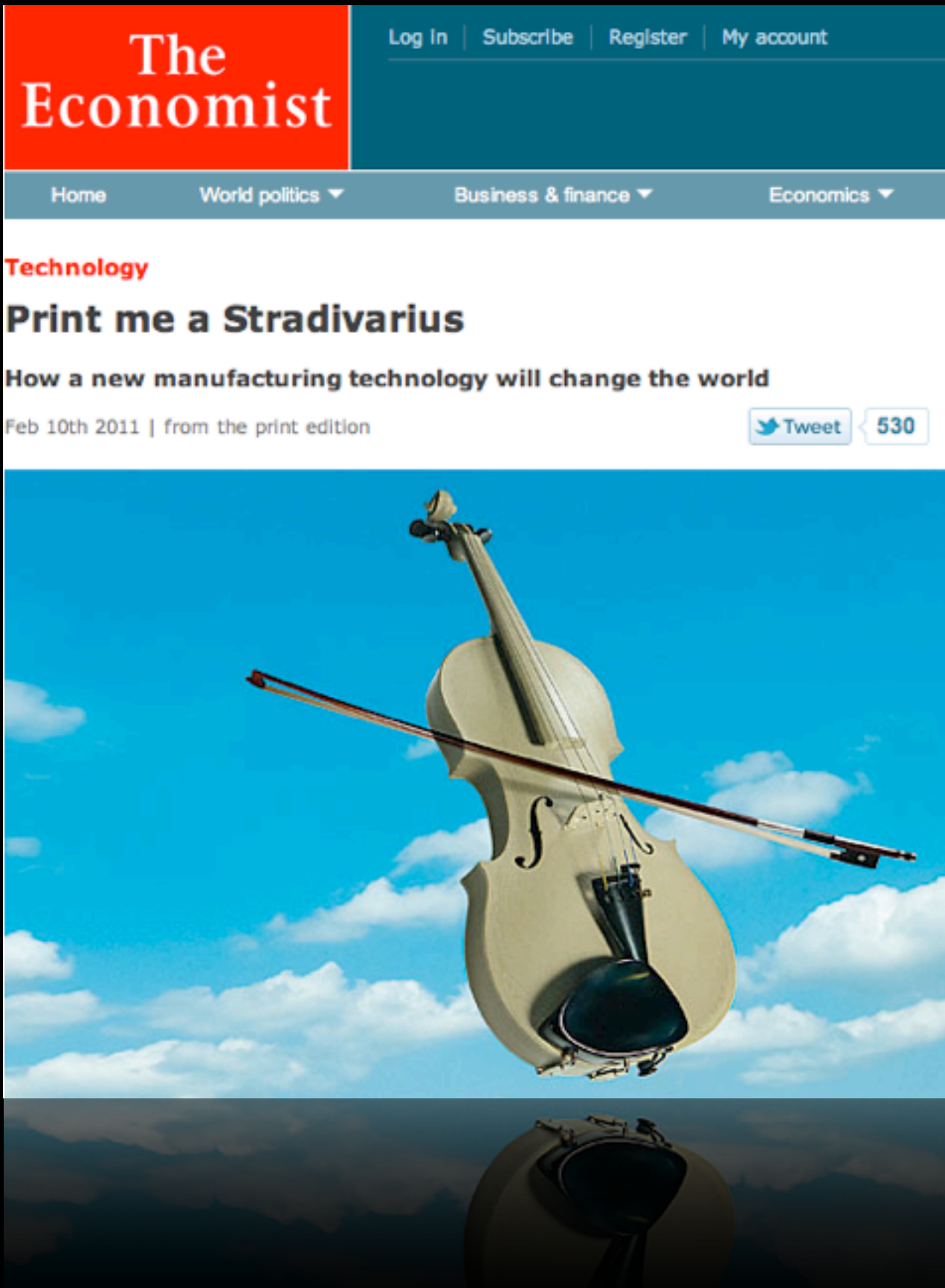
Download from supplier \$99

MacStore \$11.99

iPad / Phone \$4.99

Massive value and convenience to user

Zero cost to developer to set up  
distribution



3D Objects Created  
by incremental adding of material

Drastically changes economies of scale

Allows digital distribution of physical  
products

Reduce raw material requirements by  
50-90%

Stronger, lighter, better products

Reduce design to final product times up  
to 80%

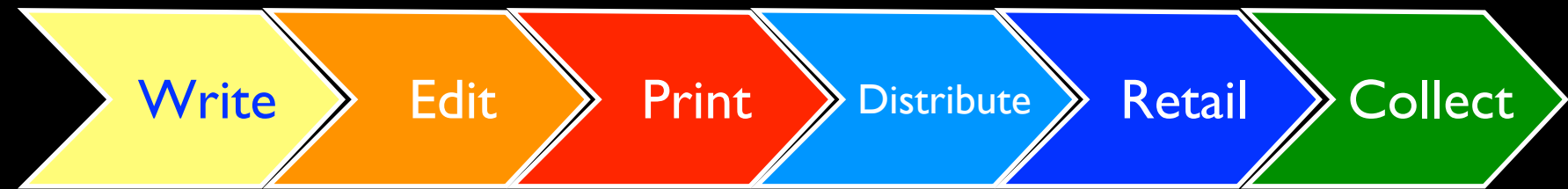
Implications for job location, IP, energy, ...

<https://www.economist.com/node/18114221>

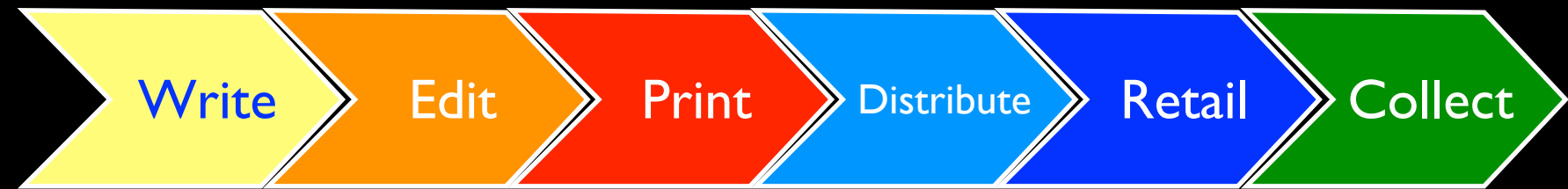
# The Vanishing Value Chain



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# The Vanishing Value Chain





“The world is changing very fast. Big will not beat small anymore. It will be the fast beating the slow.”

Rupert Murdoch, Chairman and CEO, News Corporation

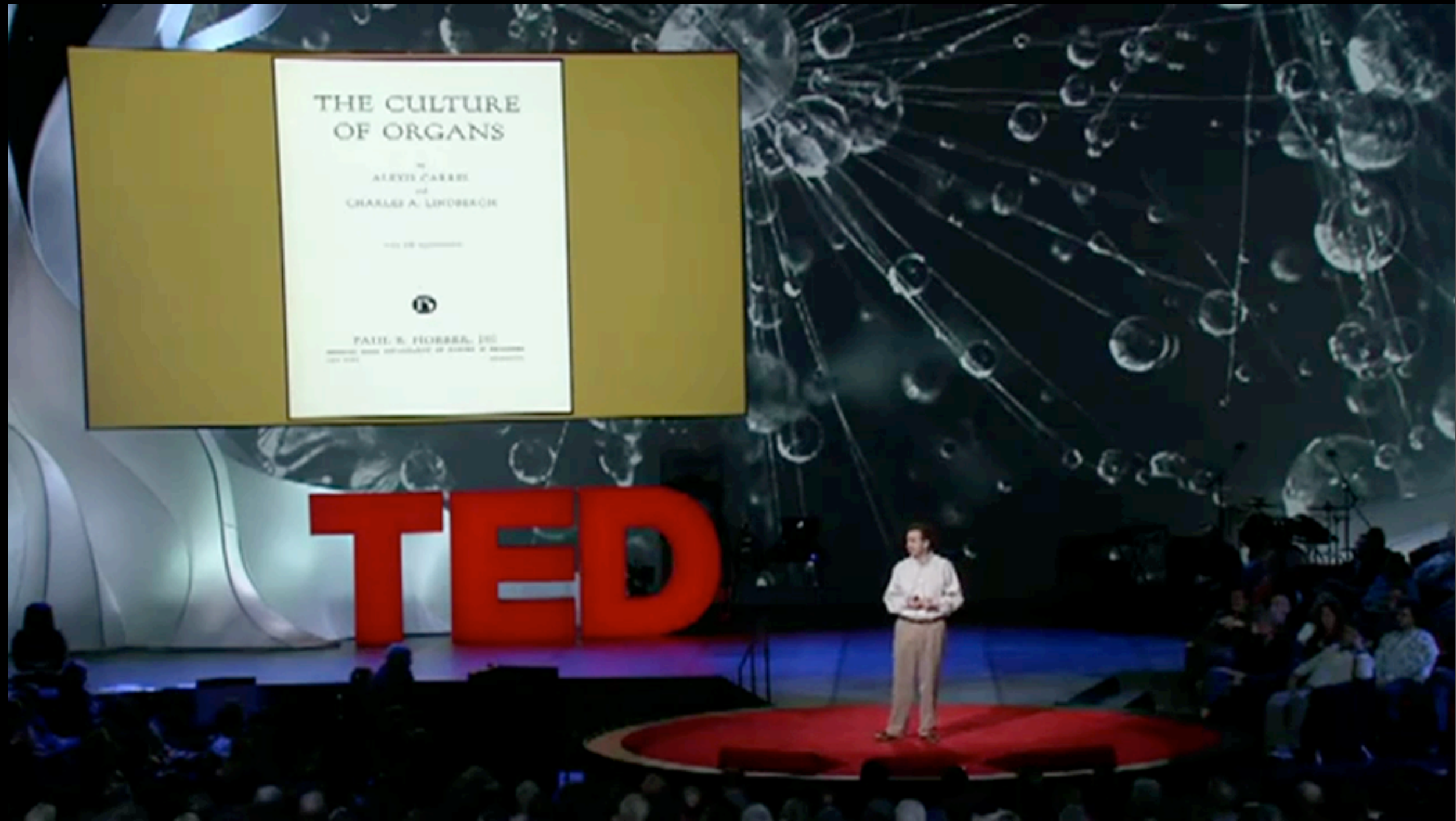
“Most inventions fail, not because they don't work, but because the timing is wrong” - Ray Kurzweil

# Medical Marvels

- Dr Forgacs @  
Univ Missouri-  
Columbia
- Dr Anthony Atala -  
Wake Forest  
Institute for  
Regenerative  
Medicing
- Creating blood  
vessels, trachea,  
ears, bladders
- Now working on  
complex organs:  
liver, kidney,  
pancreas, heart

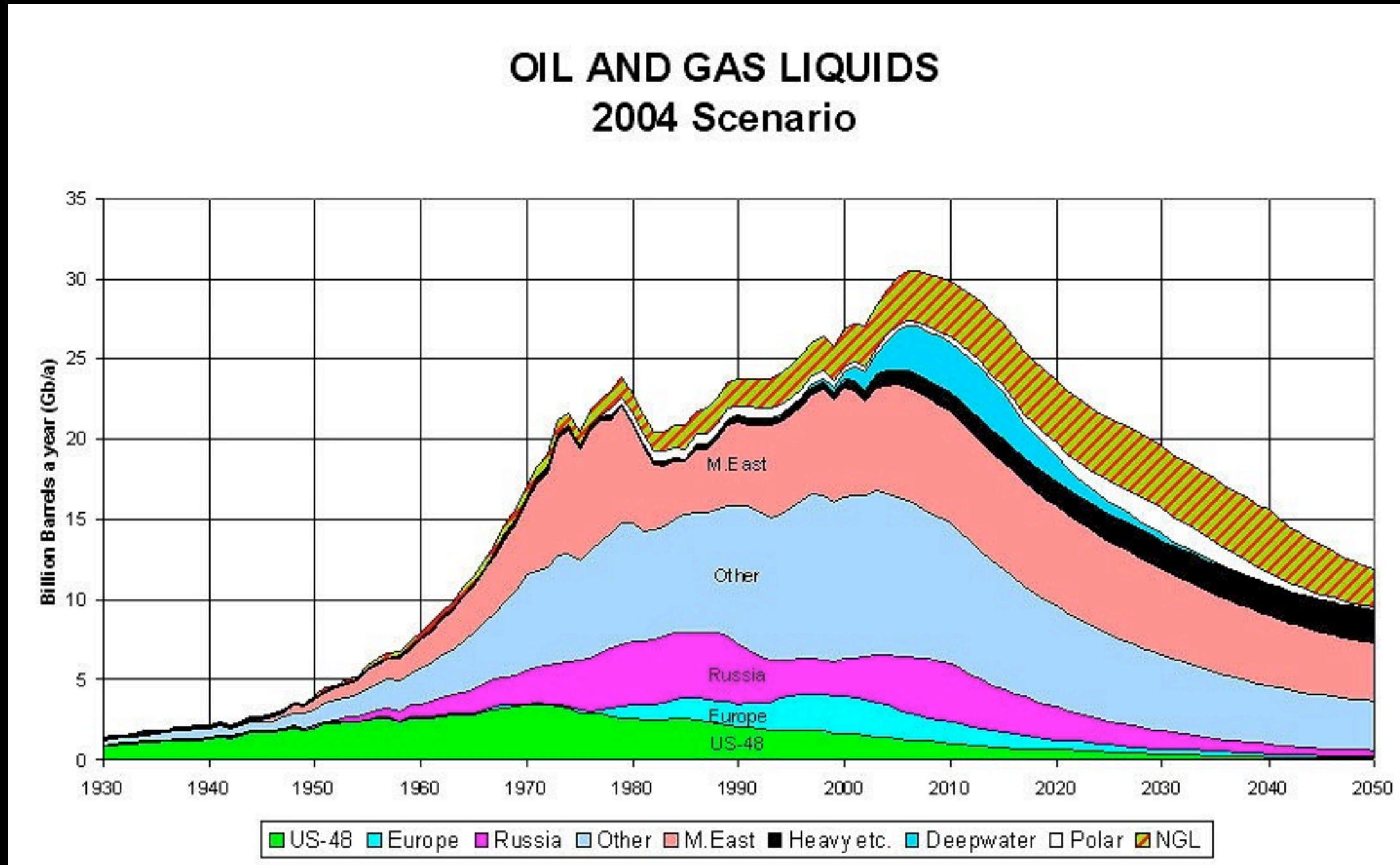
[Full talk on TEDMED](#) (only showed a short part in presentation)

- Dr Forgacs @ Univ Missouri-Columbia
- Dr Anthony Atala - Wake Forest Institute for Regenerative Medicing
- Creating blood vessels, trachea, ears, bladders
- Now working on complex organs: liver, kidney, pancreas, heart



[Full talk on TEDMED](#) (only showed a short part in presentation)

# Peak Oil..?



# Massar Zero Emissions City



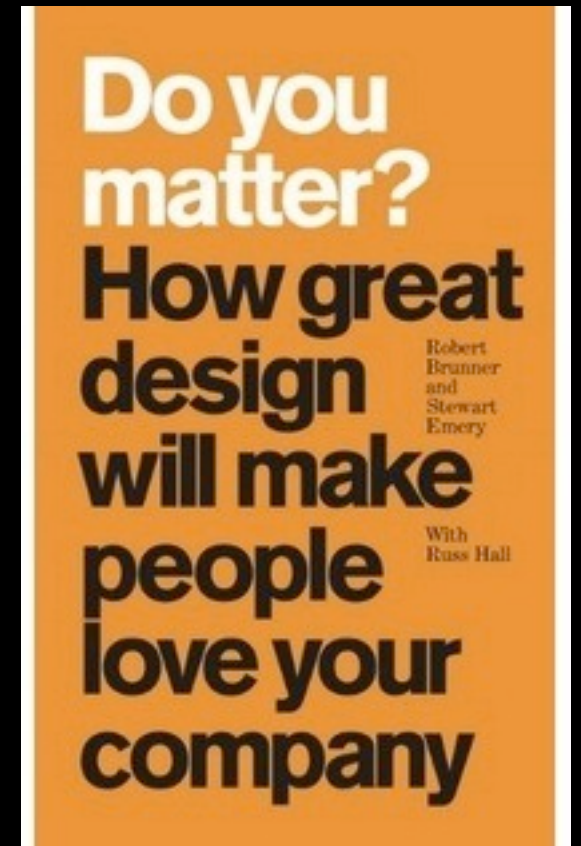
<http://www.technologyreview.com/energy/22121/page2/>

# Massive Change

It's happening - lets make it desirable

# Do You Matter?

If your company vanished, would your clients care?



“Innovation distinguishes between a leader and a follower”  
Steve Jobs

“Innovation is the central issue in economic prosperity.”  
Professor Michael Porter, Bishop William Lawrence University & Harvard  
Business School



- 14.8 Million sold in first nine months
- Internet traffic on iPads has equalled that from all Linux machines
- 80 % + of Fortune 500 Co's are deploying iPad apps
- 7 Billion app downloads on the AppStore in 2010!
- 90% of app downloads are from AppStore; \$15 Billion in sales forecast for 2011 - Gartner
- In-app purchases now account for 15% of revenue
- Purchase intent of iPad adds 1.6 times that of print adds - Dr Alex Wang, U Connecticut
- 45.5 % of "mobile" traffic to the Forrester site



# Design Matters

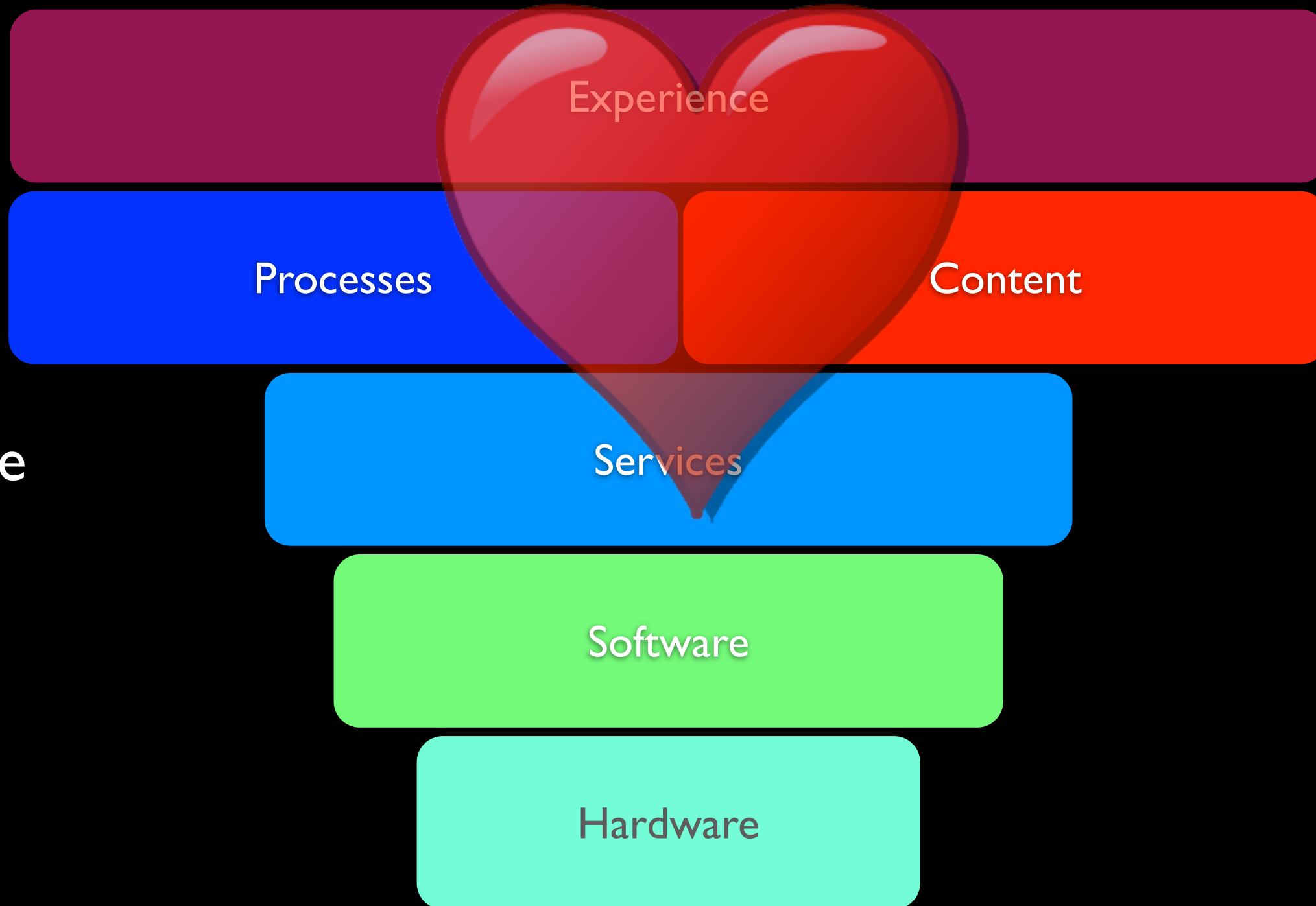
Customer Experience

Product Unique Selling Points - Purple Cows

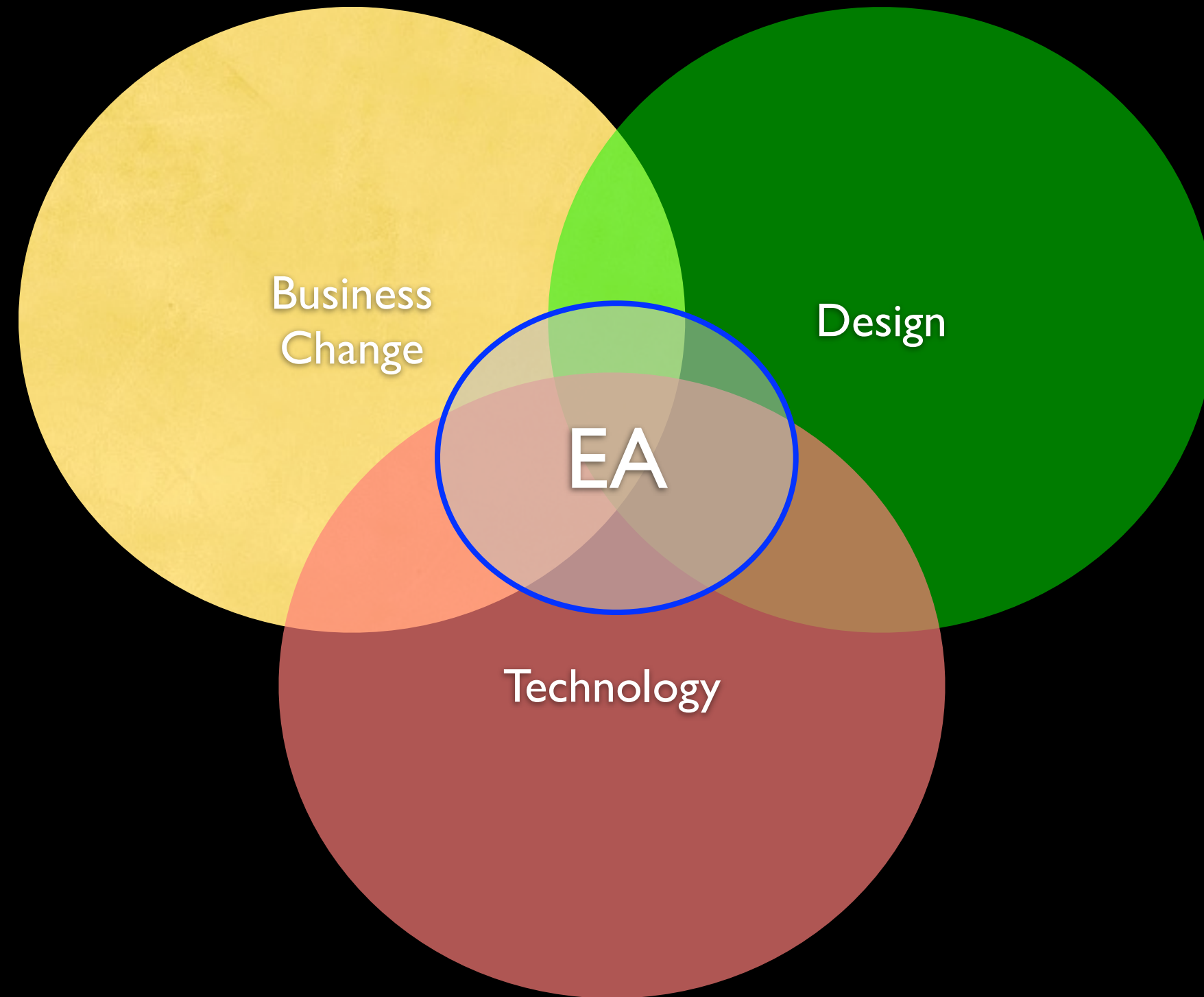
Total focus

Brand, Initial Contact, Investigation, Conviction,  
Acquisition, Growth, Sneezing...

Value is the area under the blocks

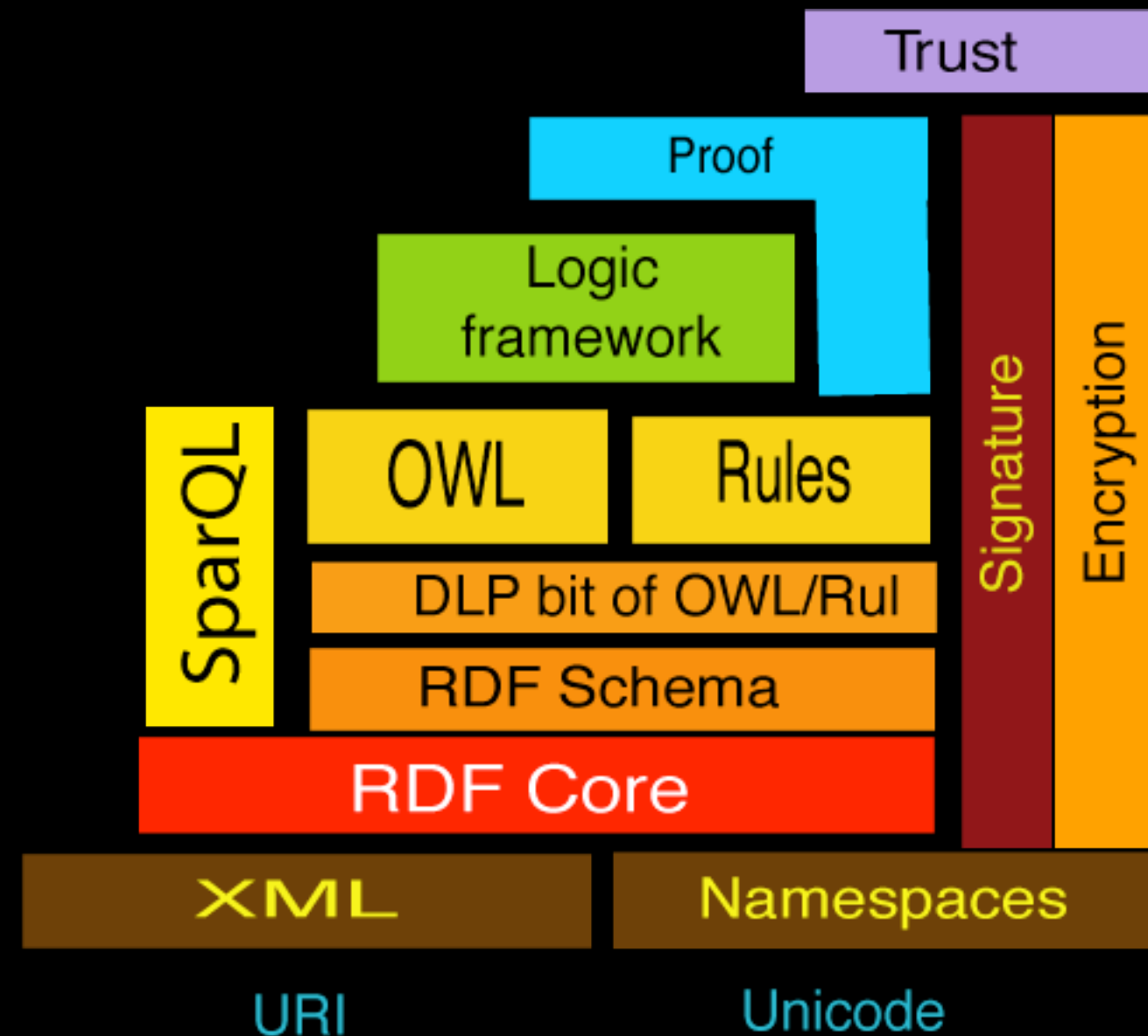


Design

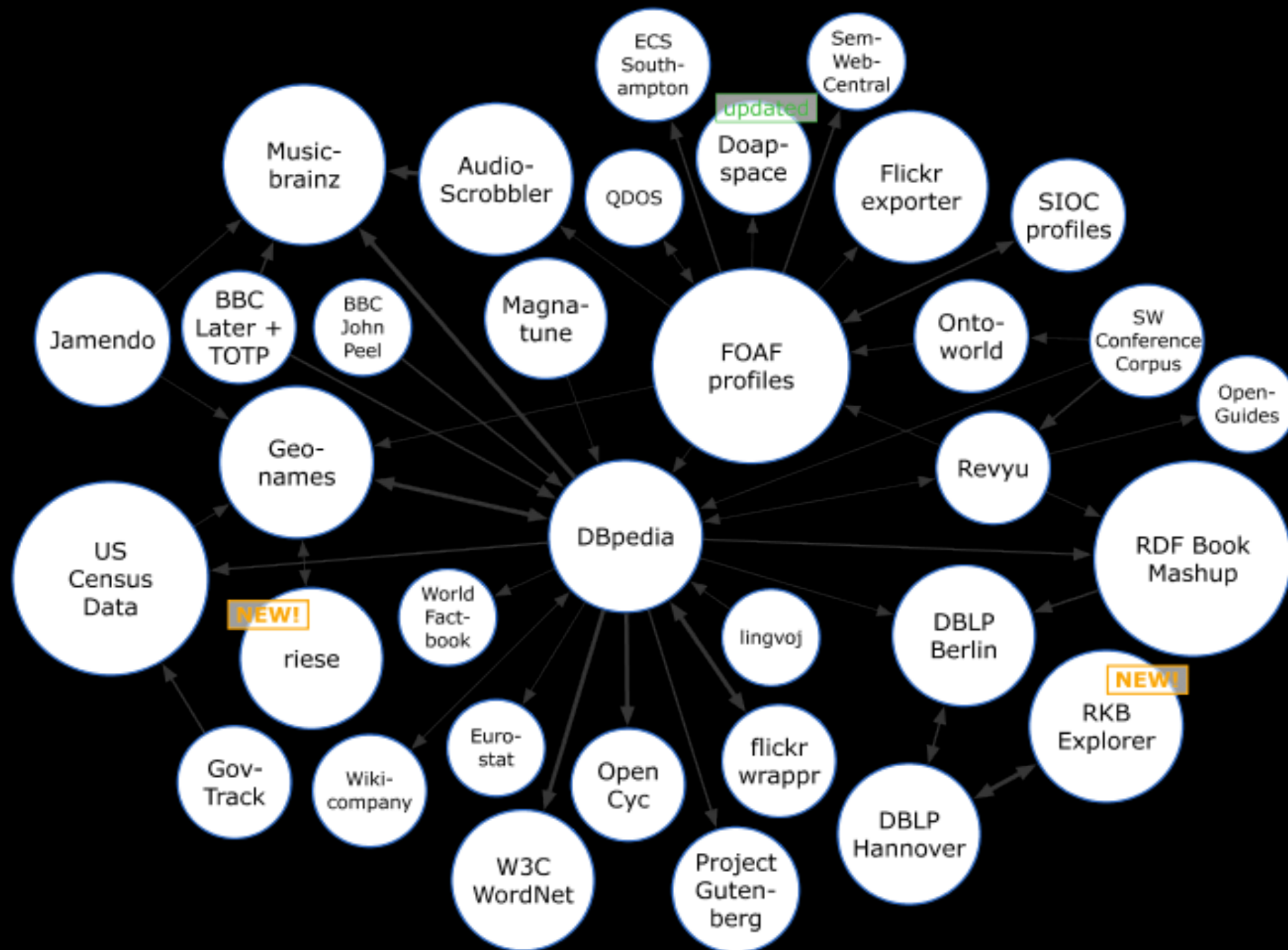


# Once more with Meaning

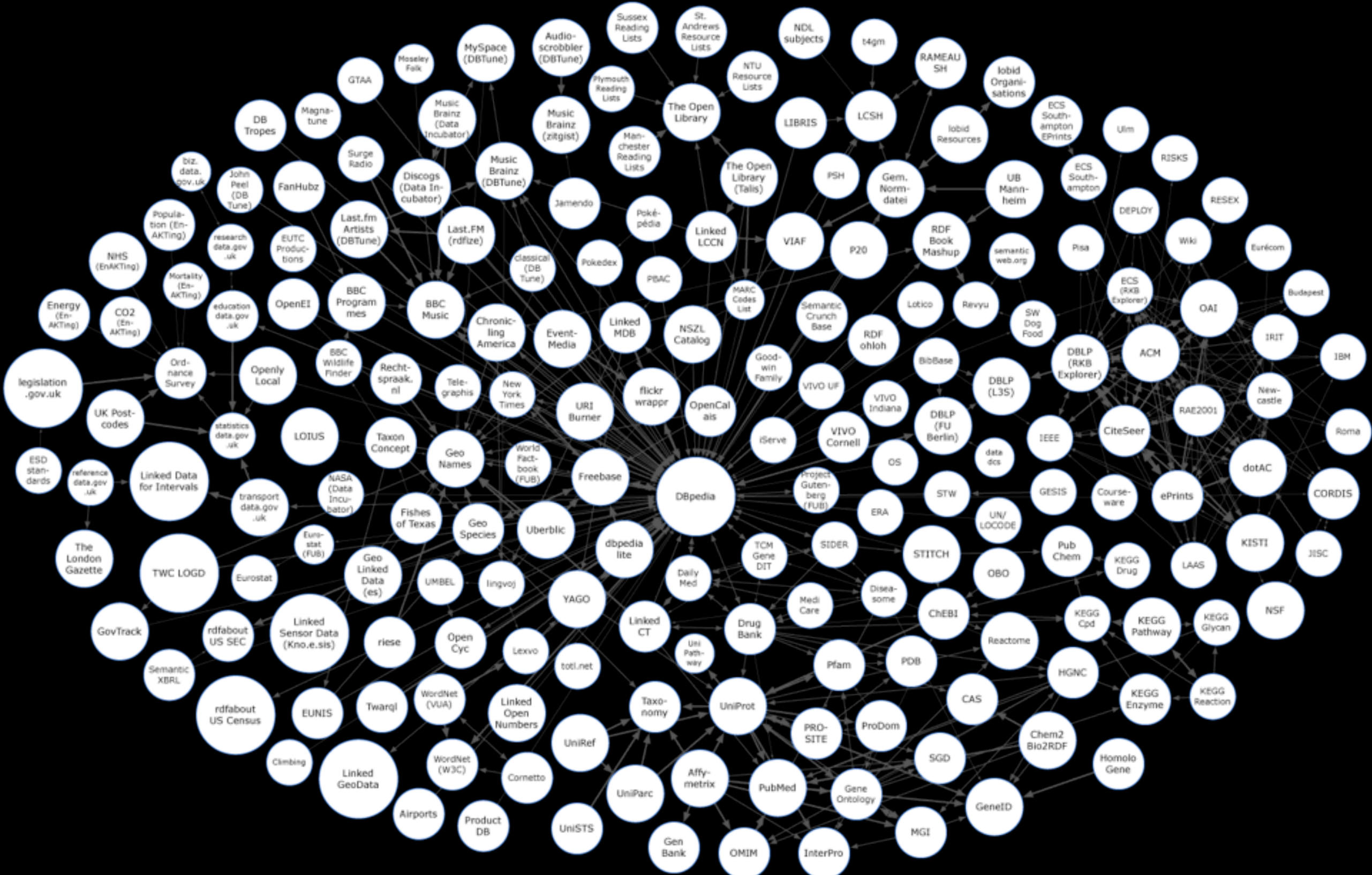
- Everything has a URL (actually a URI)
- Things are typed and we know what they are
- Links are typed and we know what they mean
- Queries can span multiple sites as one conceptual database
- Automatically merge and infer new information



Linked Open Data  
Cloud - March 2008  
Source:W3C



Linked Open  
Data Cloud  
Sept 2010  
Source:W3C





## Can Robots Surf?

### Web 1.0 - Content

Human Navigation  
Search

### Web 2.0 Transactional/Services

Social  
Fine Grained Interactivity  
Mobile  
Visual / Video

### Web 3.0 Semantic

Machine Navigation  
Query web as a massive interlinked  
data source

A live application - location limited

Voice Recognition

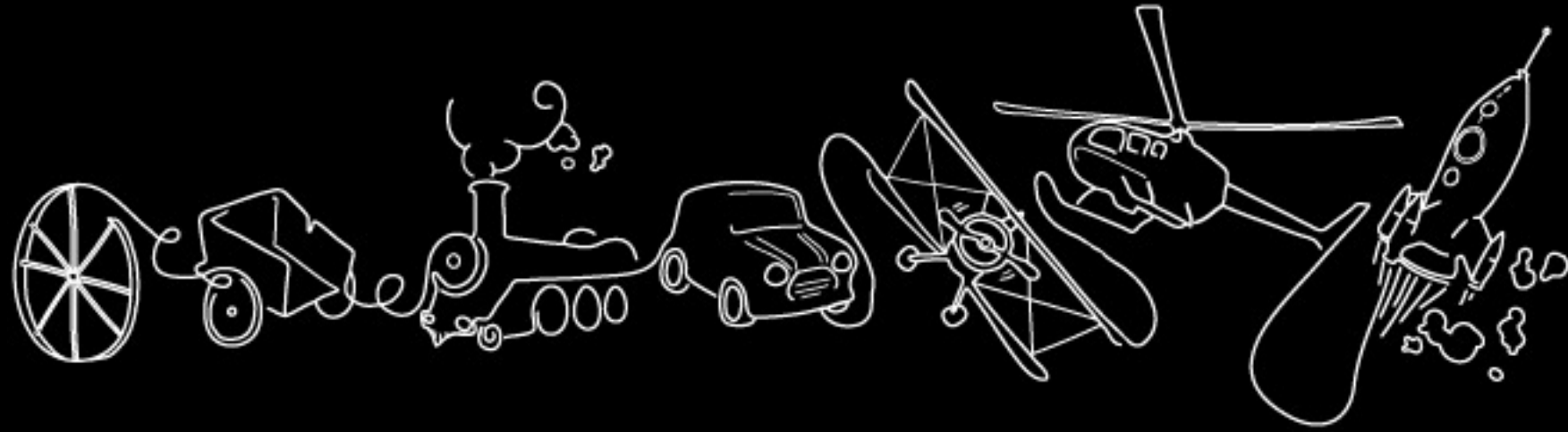
Artificial Intelligence

Semantic Data Search, Integration  
and Inferencing

[View Video Demo](#)







“Innovation is what happens when corporates aren’t paying attention”

Mark Shuttleworth  
at Design Indaba, Cape Town

# Proctor & Gamble

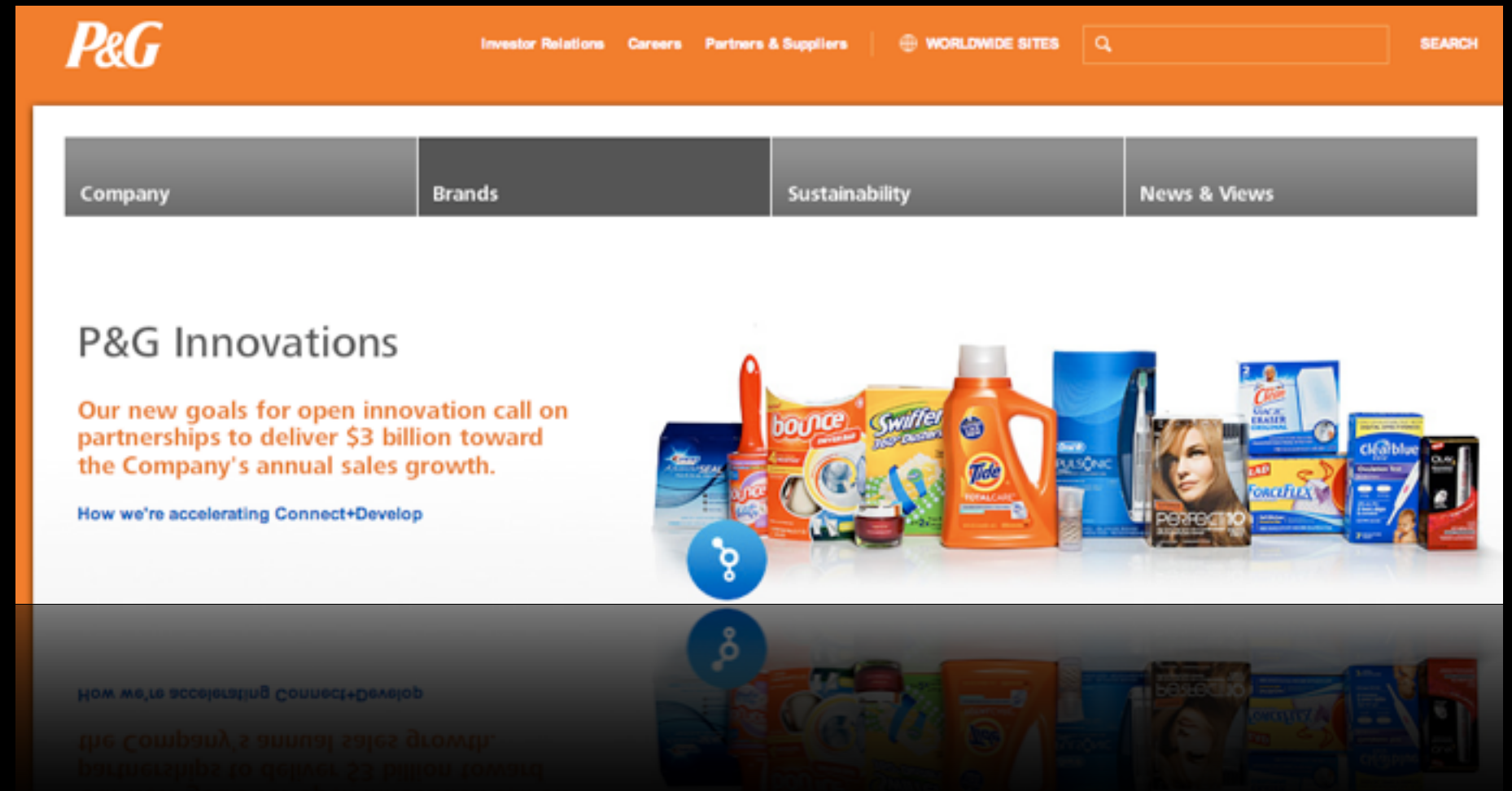
Mature, low margin industry

CEO embarked on innovation drive

Set up processes and portal to gather suggestions from inside and outside

Best ideas and authors/inventors/chemists selected for investment and partnership

Record growth for industry



# Cisco Innovation

iPrize Project

Telepresence - tens of thousands of meetings per annum

Wiki & social media backed Innovation Process

2-3 up to 25 major initiatives per year - Each a potential \$1 Bn business

12/13 of these were on track during 2010

Executives involved with growing the business - from 300 to 5000

# Innovation Networks

https://gw.innocentive.com/ar/challenge/9932746

be... EVA Prod MyBlog MyBlog Admin Inspired PromisDrupal Slideshare Apple Yahoo! Google Maps YouTube Wikipedia

ue Architect (PROD)... YouTube - 2010 InnoCentive Vid... InnoCentive - Challenge Overview

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## The Economist-InnoCentive Healthcare Information Economy Challenge

TAGS: The Economist, Public Good, Business/Entrepreneurship, Life Sciences, Ideation  
AWARD: **\$10,000 USD** | DEADLINE: 3/30/11 | ACTIVE SOLVERS: 500 | POSTED: 2/04/11

InnoCentive and The Economist are teaming up to connect InnoCentive's talented community, The Economist's millions of readers and the rest of the world with The Economist conference series entitled the Ideas Economy. Solvers are asked to provide thoughtful and valuable whitepapers on new business models that will enable a future *healthcare information economy* in which our private health data could benefit healthcare research, lower costs and ultimately improve patient care. The winning solution will receive a \$10,000 cash award and have the opportunity to present at the upcoming Economist Ideas Economy: Information conference in June 2011. Many more details are available inside the Challenge's Detailed Description section. Team Project Rooms are available on this Challenge.

Source: InnoCentive Challenge ID: 9932746

# Our intuitive models don't really equip us for the future...

- We need models that are rooted in empirical reality
- We need to connect these to our industry, our organisation, our people
- We need baselines of where we are to apply them to (including the business picture)
- We need to be tapped in to the very rapid change themes
- We will be working in multi-disciplinary teams

# CEO's Prayer

## Make Us

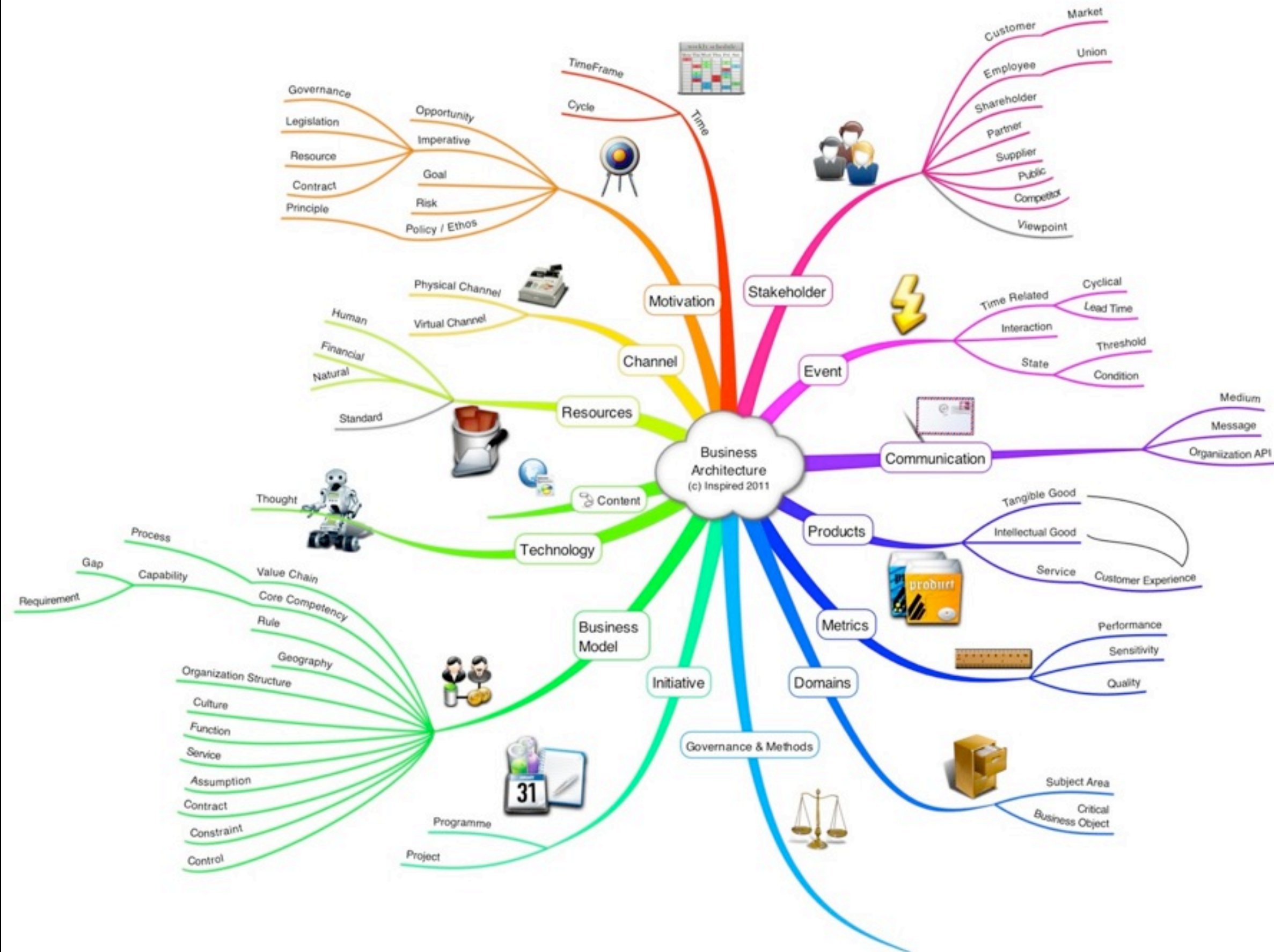
- Fast
- New
- Exciting

## But Don't

- Expose us to risk
- Spend any money
- Make any waves

Sorry, we need to take risks - but smart ones. Staying where we are is a risk!

# Business Architecture



# So...

Future is more radical than you ~~think~~ thought

Its a digital, connected, social, emotional world

Design matters - learn design thinking and promote

Adopt innovation models within EA and the enterprise

Use social media, semantic tools, external innovation networks

Don't underestimate the rapidity of change



“The best way to predict the  
future is to invent it”

Alan Kay

# References and Readings

- Design Matters - Emery, Stewart
- Purple Cows - Seth Godin
- Tribe - Seth Godin
- Linchpin - Seth Godin
- Guide to Organisation Design - Naomi Stanford
- Change by Design - Tim Brown
- Semantic Web for the Working Ontologist - Dean Allemang and Jim Hendler
- Socialnomics - Erik Qualman
- Enterprise Architecture as Strategy - Ross, Weill, Robertson
- TED Conferences - search on YouTube
- Apple Computer
- Ray Kurzweil
- Proctor and Gamble
- Cisco

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- 📄 <http://grahammcleod.typepad.com/>  
(my blog)





