

Three kinds of data for company forecasting

Presentation to

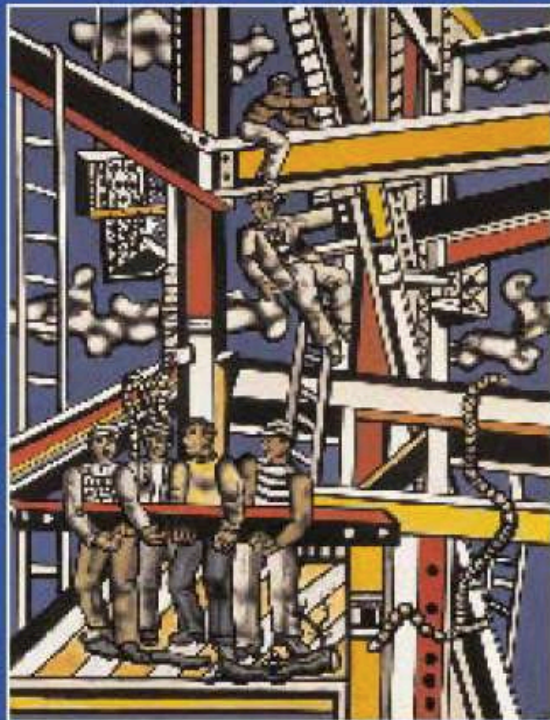
Innovayaccion Valencia

@JamesWoudhuysen

October 2017



Why is
construction
^{so}
backward?



James Woudhuysen and Ian Abley

Foreword by Martin Powley



NUMBER 2 BEAUTIFUL SPECIAL

JAMES WOULDHUYSEN
& JOE KAPLINSKY

A FUTURE
FOR ENERGY
INNOVATION

ENERGISE

Valencia Sectors

1. IT
2. Food
3. Services
4. Health, Education
5. Marketing
6. Packaging, transport and logistics
7. Retail
8. Horticulture and gardening
9. Adhesives
10. Bathroom furniture



1 Data on operations

1 Data on operations

Typically:

- Capex, payroll, overhead, tax, loans
- Selling in and selling out



The Big Read [Internet of things](#) [+ Add to myFT](#)

The internet of things: industry's digital revolution

The likes of GE and Siemens are investing billions in the 'industrial internet' but will face competition from IT groups and start-ups



73 [Save](#)

1 Data on operations

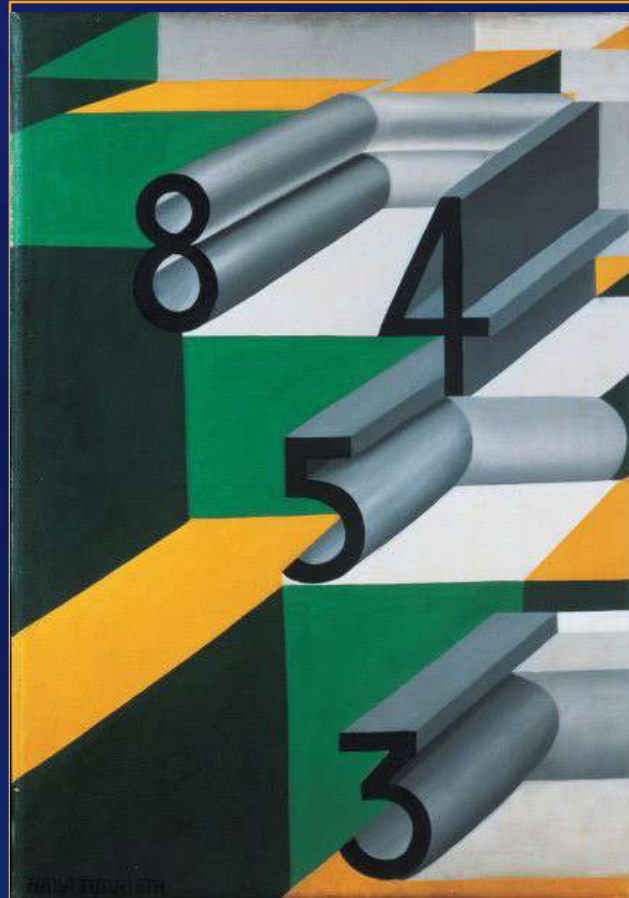
Typically:

- Capex, payroll, overhead, tax, loans
- Selling in and selling out

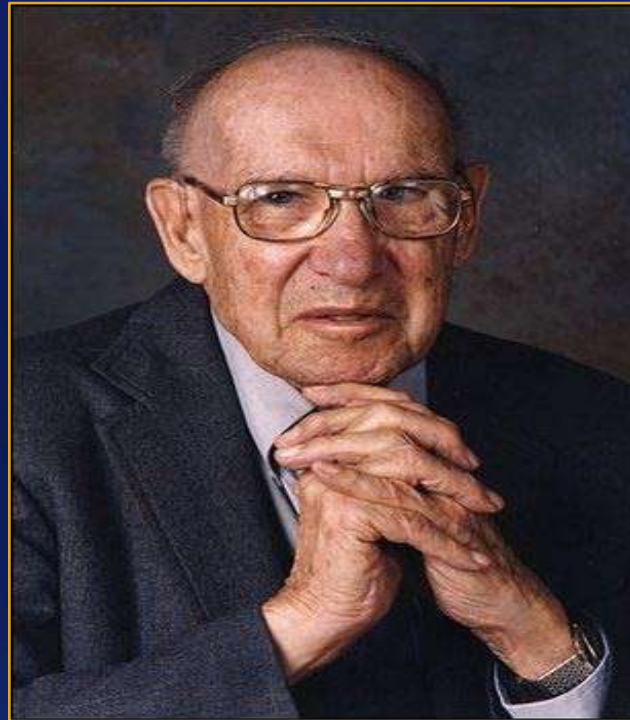
*With the **Internet of Things**,*

**If sensors can capture it,
every operation can in
principle be analysed**

Giacomo Balla, *Numbers in Love*, 1920



Peter Drucker, 1909-2005



Top 10 R&D firms: per cent sales spent on labs

1	Volkswagen	6.4
2	Samsung	8.0
3	Intel	21.9
4	Alphabet	16.0
5	Microsoft	14.1
6	Novartis	19.4
7	Roche	19.4
8	Huawei	15.0
9	J&J	12.9
10	Toyota	3.7

Source: European Commission, The 2016 EU Industrial R&D Investment Scoreboard

R&D intensities, world's top 2k R&Ders, %

Sector	EU	US	Jap	China
Pharma/biotech	13.8	18.7	11.8	2.7
Software & IT services	10.2	14.7	1.9	10.2
Tech hardware	15.1	9.3	5.2	6.7
Leisure goods	2.7	5.8	5.9	5.1
Electronics/electricals	5.3	4.2	4.5	4.3
Health equipment/services	5.1	2.8	8.0	7.8
<i>Food producers (2013)</i>		<i>1.5</i>	<i>10.9</i>	<i>1.5</i> –

Source: European Commission, The 2016 EU Industrial R&D Investment Scoreboard

1 Data on operations

Live/die by Key Performance Indicators? **No!**

“If it gets measured, it gets managed” **No!**

But “If it’s not measured, it’s **not** managed”

This kind of data:

easy to acquire,

vital to visualise

What do I do back at the office?

A. Get **better numbers**,
refine them,
reduce them

Taiichi Ohno, 1912-90: father of the Toyota Production System



Ohno: the visual is key

“ Make your workplace into a **showcase that can be understood by everyone at a glance**. In terms of quality, it means to make the defects immediately apparent. In terms of quantity, it means that **progress or delay, measured against the plan, is made immediately apparent**. When this is done, **problems can be discovered immediately, and everyone can initiate improvement plans.** ”



Visual Controls

Applying Visual Management to the Factory

Chris A. Ortiz
Murry R. Park

 CRC Press
Taylor & Francis Group

A PRODUCTIVITY PRESS BOOK

66 • *Visual Controls: Applying Visual Management to the Factory*



FIGURE 4.1
Work area tool board.

What do I do back at the office?

A. Get **better numbers**,
refine them, reduce them

B. Grow skills in
data visualisation

Data visualisation

More insights than Excel for you and your customers

Time-saving overviews, quicker decisions

Keys to data visualisation



Keys to data visualisation

I. **Compress, enlarge**, but **don't distort** the data

Keys to data visualisation

1. **Compress, enlarge**, but **don't distort** the data
2. Help readers **consider the data**, not the design/tech of the visuals
3. Enable **comparisons**, and different levels of **granularity**
4. **Integrate visuals** with **words**

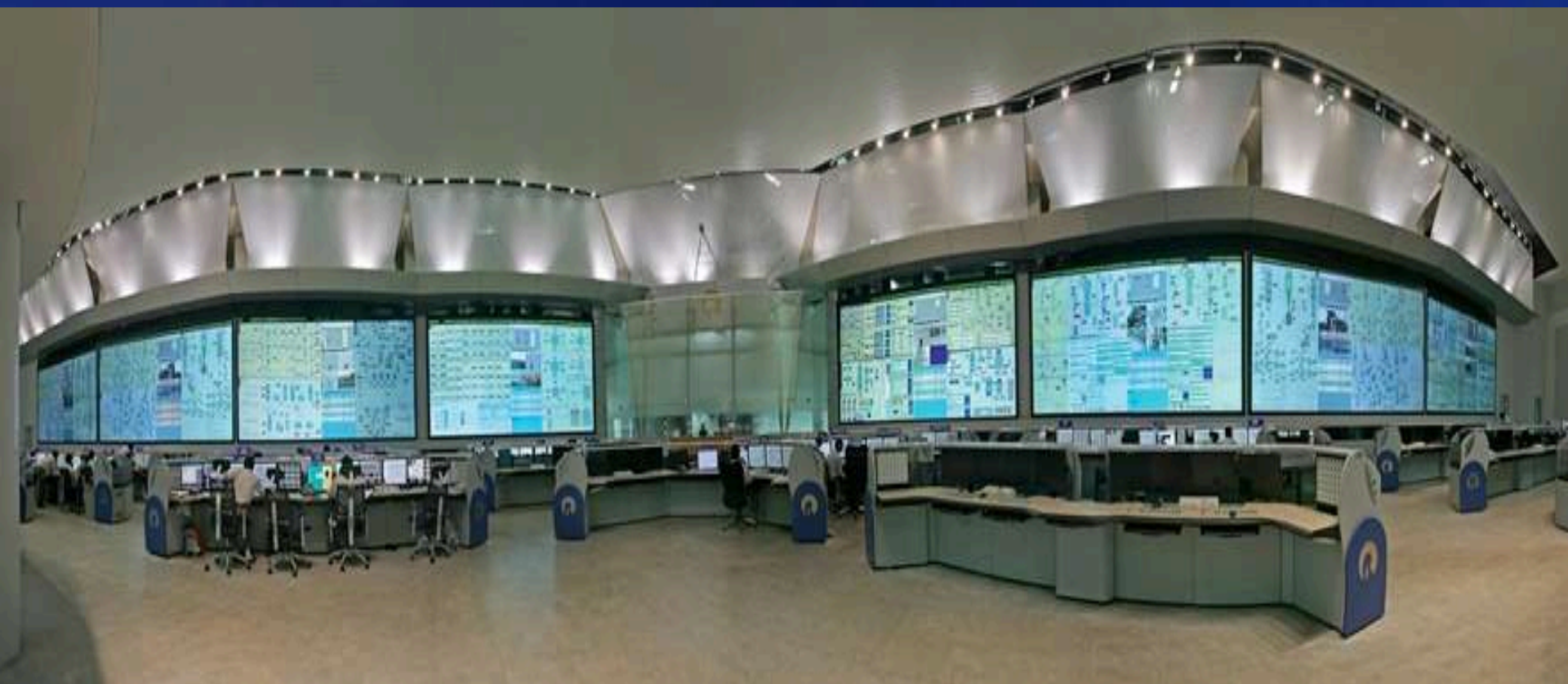
**To cut down noise,
avoid repetition – and be
ruthlessly consistent**















HMU

POWER

But...

Integrated Strategies In Action: Uber



**Product
Innovation**



**Cool, Easy-
to-Use
Products**



**Simplicity
by Design**



**Business
Strategy**



Uber's strategy for
business success

**Brand
Strategy**



What customers expect
from the Uber brand

**Experience
Strategy**



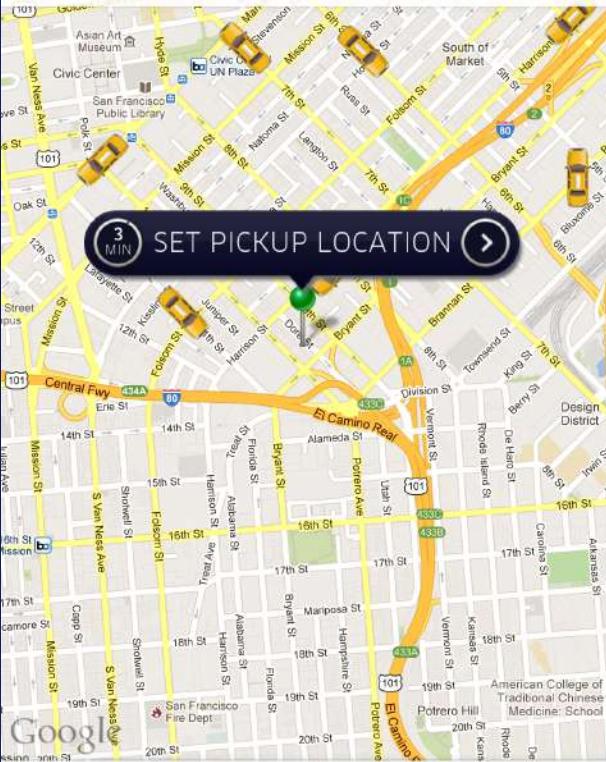
Uber's strategy to meet
these expectations

**Experience
Design**



How Uber delivers on
these expectations

PICKUP LOCATION
431-469 11TH STREET



£21.17

Thanks for choosing Uber, James



07:06am
27 Carleton Dr, London SW15
2BS, UK

07:48am
Watergate Walk, London WC2N
6NE, UK

CAR	MILES	TRIP TIME
uberX	7.05	00:42:13

FARE BREAKDOWN

Base Fare	2.50
Distance	8.81
Time	6.33

Normal Fare	£17.64
Surge x1.2	3.53

Subtotal **£21.17**

CHARGED

Personal **** 2019 **£21.17**

[Visit the trip page](#) for more information, including invoices (where available)



You rode with Said Omar

RATE YOUR DRIVER



But... the
Uber lesson:
SIMPLICITY

2 Data on customer Goals

Key thinktanks on future consumers

 Arup Foresight	 LONG BETS
 Astrology	 The Long Now Foundation
 Copenhagen Institute for Futures Studies	 Making Futures 3 Conference Home
 Foresight Network	 Marketing&Trendinformation
 Foundation For the Future	 NPD Insight
 Future Agenda - A Global Debate	 OECD mtgs
 Futures - Journal - Elsevier	 Paleo-Future
 Futures Company	 Richard Scase
 Futuretext	 Shaping Tomorrow
 futuressence	 Tofflers
 Future Files	 Trajectory - Glimpses
 Future Foundation	 Trends events
 The Future Laboratory	 Trendstop fashion
 Global Business Network	 trendwatching
 Hudson Institute	 Whatif
 Institute for the Future	 What's Next
 International Institute of Forecasters	 World Future Society
Kjaer	WGSN Fashion Trend Forecasting & Analysis

EU consumers fear the future, but a bit less



source: European Commission services, September 2017, https://ec.europa.eu/info/sites/info/files/fccj_2017_09_en.pdf

2 Data on customer Goals

Both private and public
data mainly treat

Attitudes,

Behaviour and

Circumstances, not

underlying Goals

A world of talents, not just needs



????? ?????,
1908-70



Abraham Maslow, 1908-70

His **'hierarchy of needs'** was much more subtle than people make out.

He noted 'the desire to **know**... understand... systematise... organise... analyse... **look for relations and meanings**'

'A theory of human need', *Psychological Review*, September 1943



2 Data on customer Goals

Both private and public data mainly treat **Attitudes, Behaviour** and **Circumstances**, not **underlying Goals**

Goals => human **talent and purpose**, not just **needs**

BUSINESS FADS

PAGE 40

What's In

- ✓ INTRAPRENEURS
- ✓ THE 50-PLUS MARKET
- ✓ PAY FOR PERFORMANCE
- ✓ STRATEGIC ALLIANCES
- ✓ TOUCHY-FEELY MANAGERS
- ✓ EXECUTIVE CELEBRITIES
- ✓ DEMASSING
- ✓ SKUNK WORKS
- ✓ RESTRUCTURING
- ✓ CHAPTER 11
- ✓ BACK TO BASICS
- ✓ CORPORATE CULTURE
- ✓ MARKET NICHES
- ✓ NEW ENGLAND

What's Out

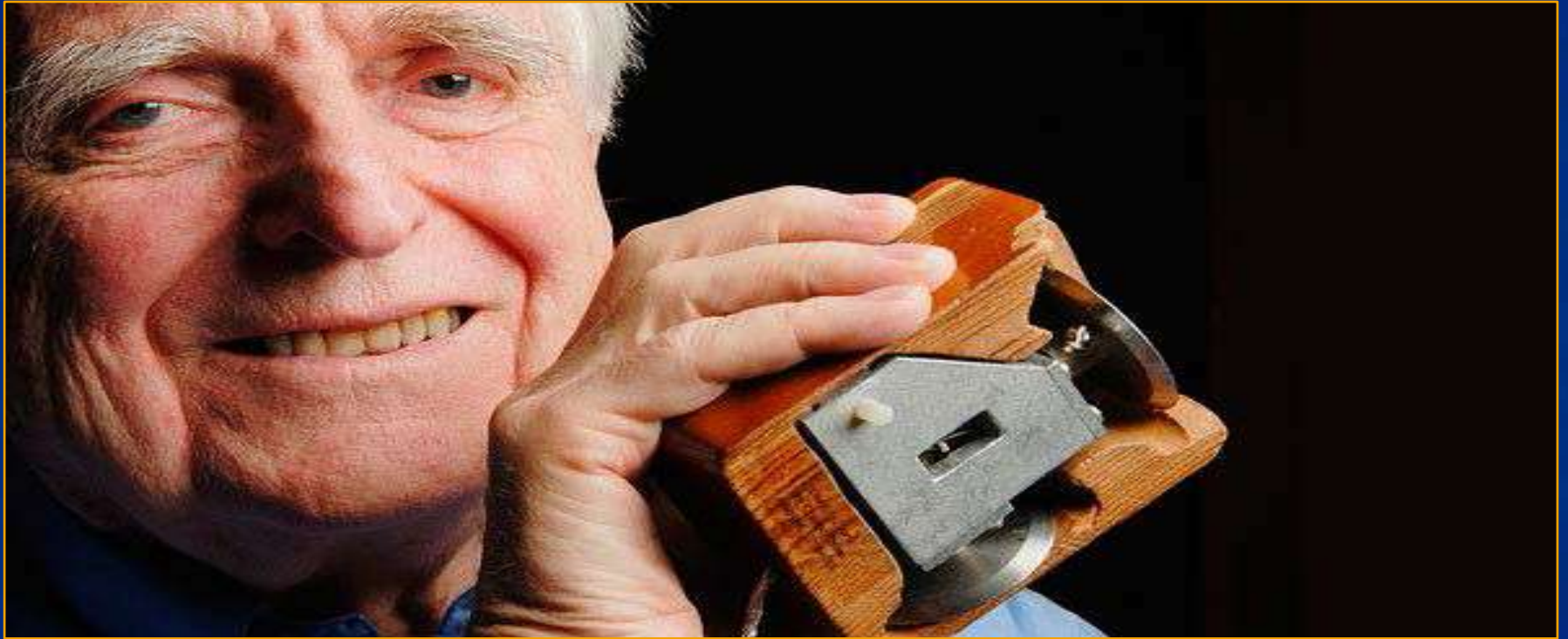
- ✗ CORPORATE PLANNERS
- ✗ THE YUPPIE MARKET
- ✗ MANAGEMENT BY OBJECTIVES
- ✗ HOSTILE TAKEOVERS
- ✗ AUTOCRATIC BOSSES
- ✗ ECONOMISTS
- ✗ WALK-AROUND MANAGING
- ✗ FACTORY OF THE FUTURE
- ✗ JUNK BONDS
- ✗ REINDUSTRIALIZATION
- ✗ THEORY Z
- ✗ CONSULTANTS
- ✗ SYNERGY
- ✗ THE SUNBELT



1963: Doug Englebart invents the mouse.

First demo of remote online search.

'stakeholders' emerge in an SRI internal memo



The stakeholder notion is indeed a deceptively simple one. It says that there are other groups to whom the corporation is responsible in addition to stockholders: those groups who have a *stake* in the actions of the corporation.⁶ The word *stakeholder*, coined in an internal memorandum at the Stanford Research Institute in 1963,⁷ refers to “those groups without whose support the organization would cease to exist.” The list of stakeholders originally included shareowners, employees, customers, suppliers, lenders, and society. Stemming from the work of Igor Ansoff and Robert Stewart (in the planning department at Lockheed) and, later, Marion Doscher and Stewart (at SRI), stakeholder analysis served and continues to serve an important function in the SRI corporate planning process.

Stockholders and Stakeholders: A New Perspective on Corporate Governance

R. Edward Freeman David L. Reed

The purpose of this article is to show how the concept of stakeholders in an organization can be used to understand the tasks of the board of directors. The authors argue that a volunteeristic approach to questions of corporate governance which focuses on effective director behavior is preferable to structural change via legislation.

Ronnie





METRO
Evening Standard

'I did have a relationship with Monica Lewinsky. It was not appropriate'

CLINTON CONFESSES

Live on TV, President owns up to seven months of lying

THE PRESIDENT HAS OWNED UP TO SEVEN MONTHS OF LYING TO THE AMERICAN PEOPLE ABOUT HIS RELATIONSHIP WITH MONICA LEWINSKY.

Bill Clinton has admitted to having a relationship with Monica Lewinsky, a White House aide, during his presidency. He said the relationship was not appropriate and that he lied about it for seven months.



Number of mentions of the word 'stakeholder' in major Presidential speeches, US, 1994-2010

Number of mentions

1 4 1 4 7 7 12 3 3 2 3 2 8 7 7 1 24 35

Year

94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 09 10

President

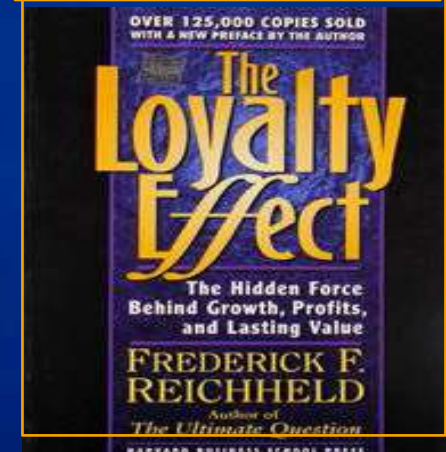
William J. Clinton

George W. Bush

Barack Obama

The Gospel according to Bain, 1996

NB! The struggle to
**increase market
share falls behind
keeping hold of the
same old
customers**





UX

How to Profit From Experience

Consider the humble coffee bean. It is by no means a commodity; its current price of about \$1 a pound translates to three or four cents a cup. But then a manufacturer grinds and packages coffee, turning it into a good, selling for five to 25 cents per cup. Brew and serve that coffee in a diner, and you're delivering a service, raising the price to perhaps \$1 a cup.

No coffee can be any of three distinct economic offerings: commodity, good or service. But wait. When coffee is served in the ambiance of a five-star restaurant or an espresso bar — where ordering, creation and consumption assume a heightened ambience or sense of theater — consumers gladly pay \$2 to \$5 a cup. At a place like Pequot's on the Chicago-Kyle Ave. in Park, a single cup of coffee may run \$10 to \$20. These businesses are able to charge more because they offer a distinctive experience.

Experiences are a distinct economic offering, as different from services as services are from goods. Experiences have always been at the heart of entertainment, exemplified by Disney theme parks. For every guest that "customer" or "guest" (Wall Disney World cast members call "employees") stage a complete production of sights, sounds, tastes, aromas and textures to create a memorable experience. Likewise, at theme restaurants like Planet Hollywood and the All Star Cafe, the food is just a prop for what's known in the industry as an "entertainment" experience.

Today, however, companies in a wide variety of fields are packaging their offerings as experiences. Former British Airways Chairman Sir Colin Marshall told in the Harvard Business Review that the commodity mindset is to "think that a business merely performs a function. In our case, transporting people from point A to point B on time and at the lowest possible price." What British Airways does, Sir Colin continued, is to "go beyond the function and compete on the basis of providing an experience." In a speech at last November's Cendant computer show, Intel Chairman

Andrew Grove declared that "we need to look at our business as more than simply building and selling personal computers. Our business is the delivery of information and skills, interactive experiences."

What distinguishes an experience from a good or a service?

- Goods are tangible and services intangible, but both are decidedly uneventful, while experiences are memorable.

- Goods are inventoried and services delivered on demand, while experiences unfold over a period of time.

- Goods are standardized and services customized (respond to individual demand). But both remain at arm's length; outside the customer. Experiences, on the other hand, are intensely personal.

Manager's Journal

By B. Joseph Pine II
And James H. Gilmore

These distinctions explain why experiences have the power to create new and greater economic value. But don't assume that selling experiences is merely a matter of entertaining customers; entertainment is only one kind of experience. Rather, it is about engaging them — connecting with them in a personal, memorable way.

Some examples: Paris Mill, a Japanese company, created a computer system for selecting eyeglasses. The system analyzes a digital picture of a customer's face to suggest what shape lens would look best, then allows the customer to complete the design and prints out a picture of him in glasses that have yet to be produced. Charlotte Catechism sells "everything you need for a choir" that allow members to stage their own experiences.

Some experiences are about escapism: Computer-based sports games, flight simulators and virtual reality games turn ordinary jobs into adventures. Or the opposite:

Dallas Cowboys quarterback Troy Aikman once told Sports Illustrated that he frequently visits America Online. "I like to go to the Texas Forum and chat with people. It puts us on the same level. It's nice, too, having a normal conversation with somebody without them knowing who I am."

Even the most mundane transactions can be turned into experiences. Each floor at O'Hare Airport's parking garage, run by Standard Parking of Chicago, has its own signature song and is decorated with items of a local sports franchise — the Bulls floor, the White Sox floor, and so forth. An ex-Chicago resident told us, "You never forget where you parked." Progressive Corp. even makes settling an insurance claim an experience. Its claims adjusters arrive at accident scenes in vans outfitted with everything they need to settle a claim immediately. Inside the van, claimants receive not only a check but also a cup of coffee, "coach time" to settle their nerves and a chance to use the adjuster's cellular telephone to reassure their loved ones.

All of this is evidence of a new, emerging economy. If you think this is an exaggeration, keep in mind that economists once post-pushed services, which no less a sage than Adam Smith called "unproductive labour," activities required only to bring goods to market. Today manufacturers understand that services are often the key to establishing their goods' value and forestalling commoditization. Similarly, service providers now use experiences to increase the attractiveness of their offering — to bring customers back to the same airline, bank, hotel or store. This is the natural progression, but as services increasingly become commoditized themselves, more and more businesses will explicitly charge for the memorable encounters they stage, and thereby enter the new experience economy.

Mr. Pine, author of "Mass Customization: The New Frontier in Business Competition" (Harvard Business School Press, 2001), and Mr. Gilmore are fellows with Deloitte Technology Partners of Chicago.

Legitimacy crisis

Organisation	Undone by	Date
GSK	Bribes	2012
NSA	Edward Snowden	2013
BHS, VW	Philip Green, fake emissions	2015
Big 4 accountants	Audit, etc	2013-6
RR, BT, Barclays	Bribes, sloth, fraud	2017
RBK&C /HMG	Criminal negligence	2017



Legitimacy crisis

EU wages set for **stagnation**

No clear **corporate strategy/goals**

No clear **Plan B** for

1. **Disruptions** caused by **drought, fire**
2. **Reputation management** given **food poisoning, hacking**



S.F. → N.Y.C., Aug 18

SFO → SEA, Aug 18 → 26

Seattle

sort by

agony

price

stops

departure time

arrival time

duration

filter

San Francisco, CA
New York, NY

8:00 AM

10am

1pm

2pm

3pm

6pm

10pm

2am

6am

select	\$328	OAK → EWR								
select	\$333	OAK → EWR				US		US A		
select	\$390	OAK → EWR				US		US Airways		
select	\$471	SFO → JFK								
select	\$471	SFO → JFK						JetBlue		
select	\$471	SFO → JFK								
select	\$471	SFO → JFK						Delta		
select	\$471	SFO → JFK						Delta		
select	\$481	SFO → JFK								Am



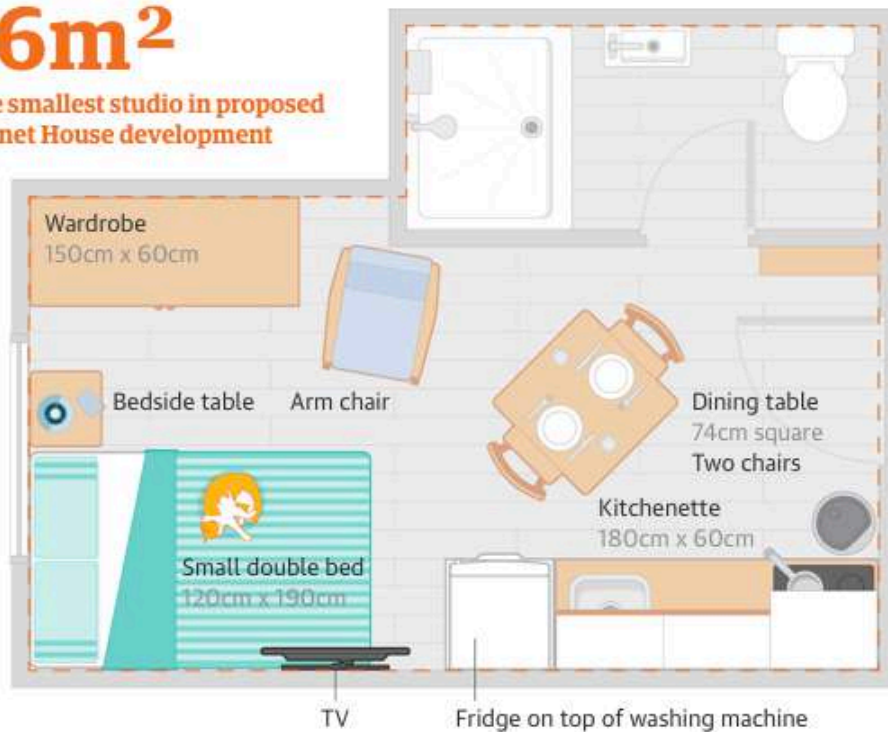


37m²

The legal minimum size of a new one person, one bed flat in London

16m²

The smallest studio in proposed Barnet House development



Rising wages in India leads to expanding waistlines



ADVERTISEMENT

1 November 2011 Last updated at 05:00 GMT

2

Medical experts in India say rising incomes in the country are leading to expanding waistlines.

Almost one in five Indian adults is now overweight, and officials are being urged to slim down.

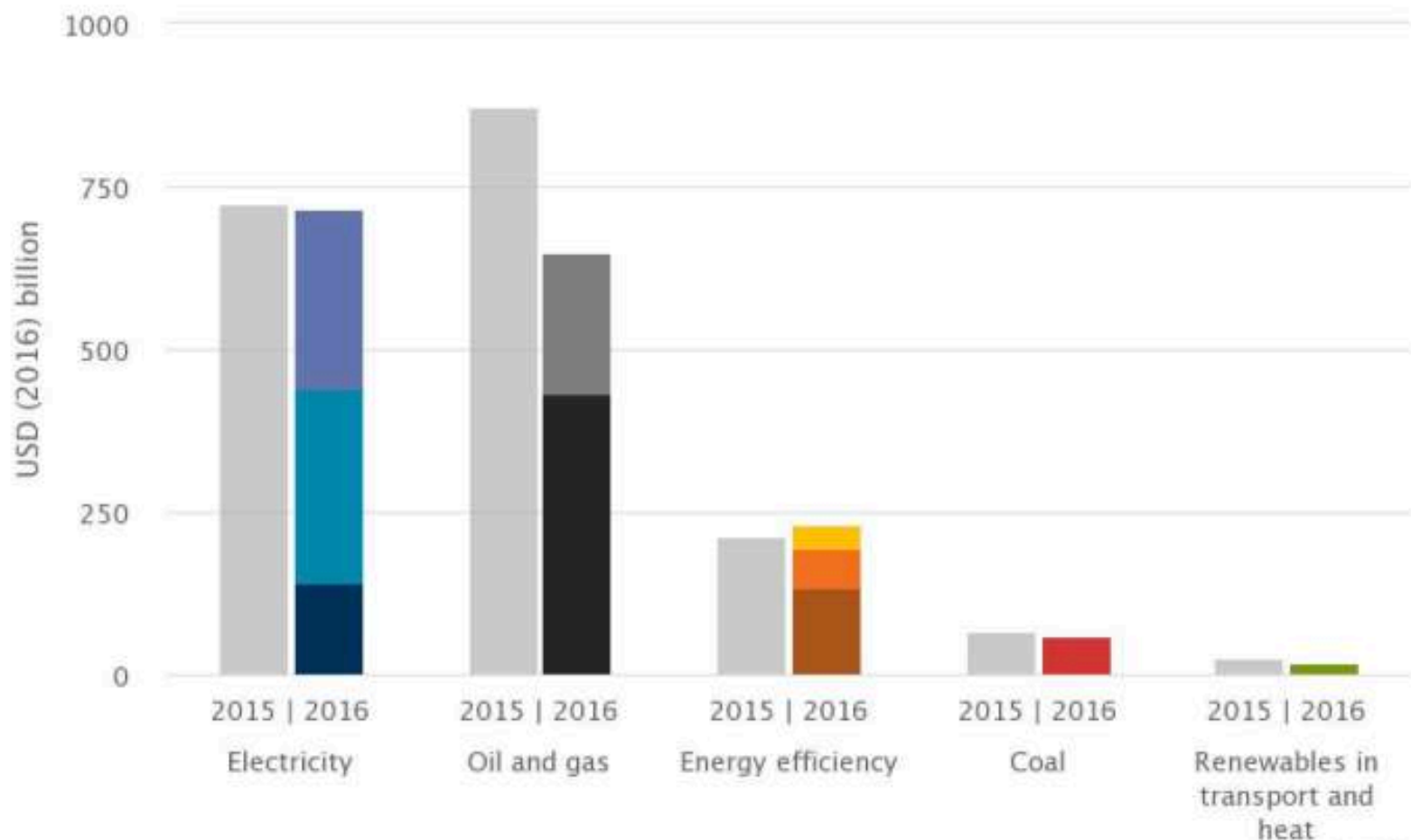
Police officers are being told to take regular exercise and some politicians are resorting to weight loss surgery.

UX: it's a congested,
tight world...

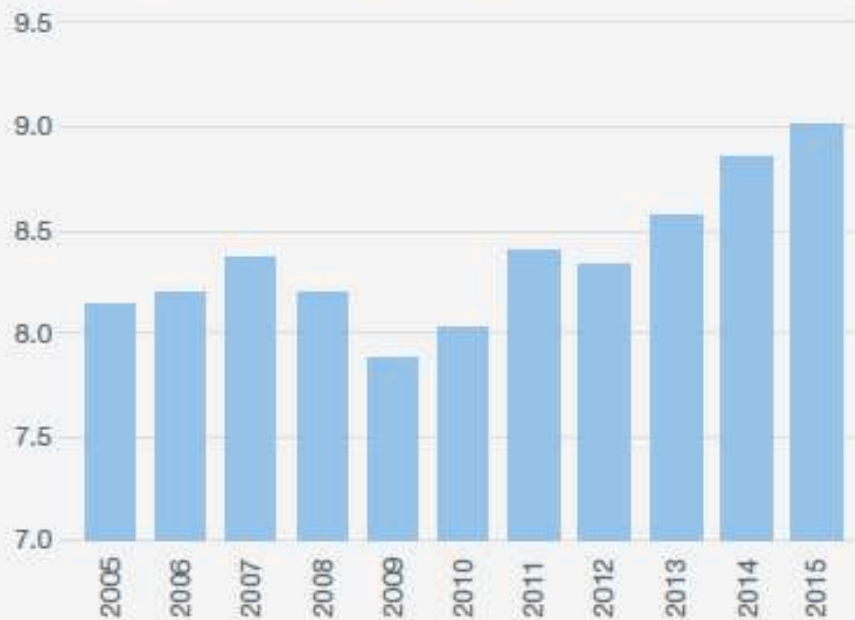
... with weak

Capex

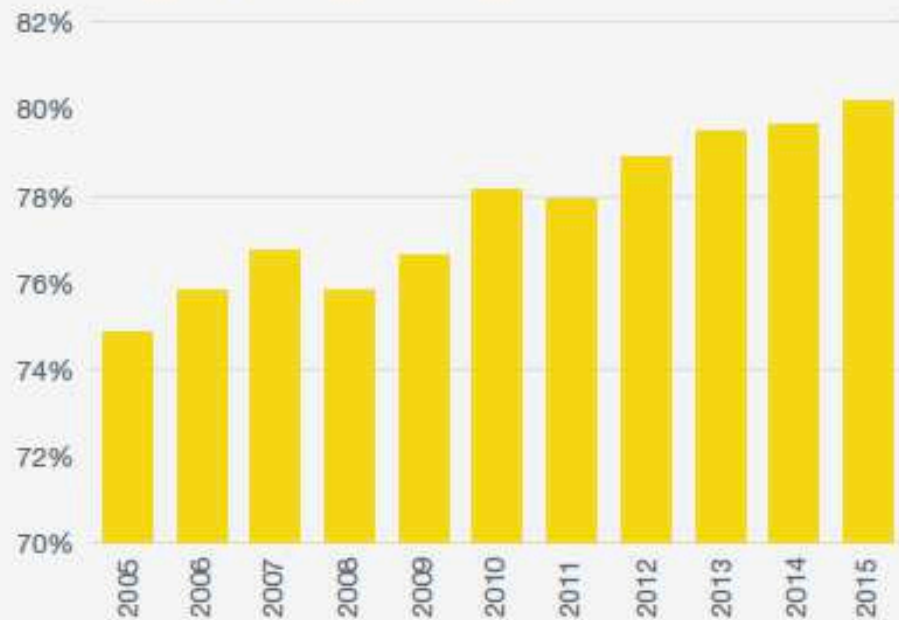
Energy investment by sector in 2016



Passenger Airplane Utilization Hours/Day

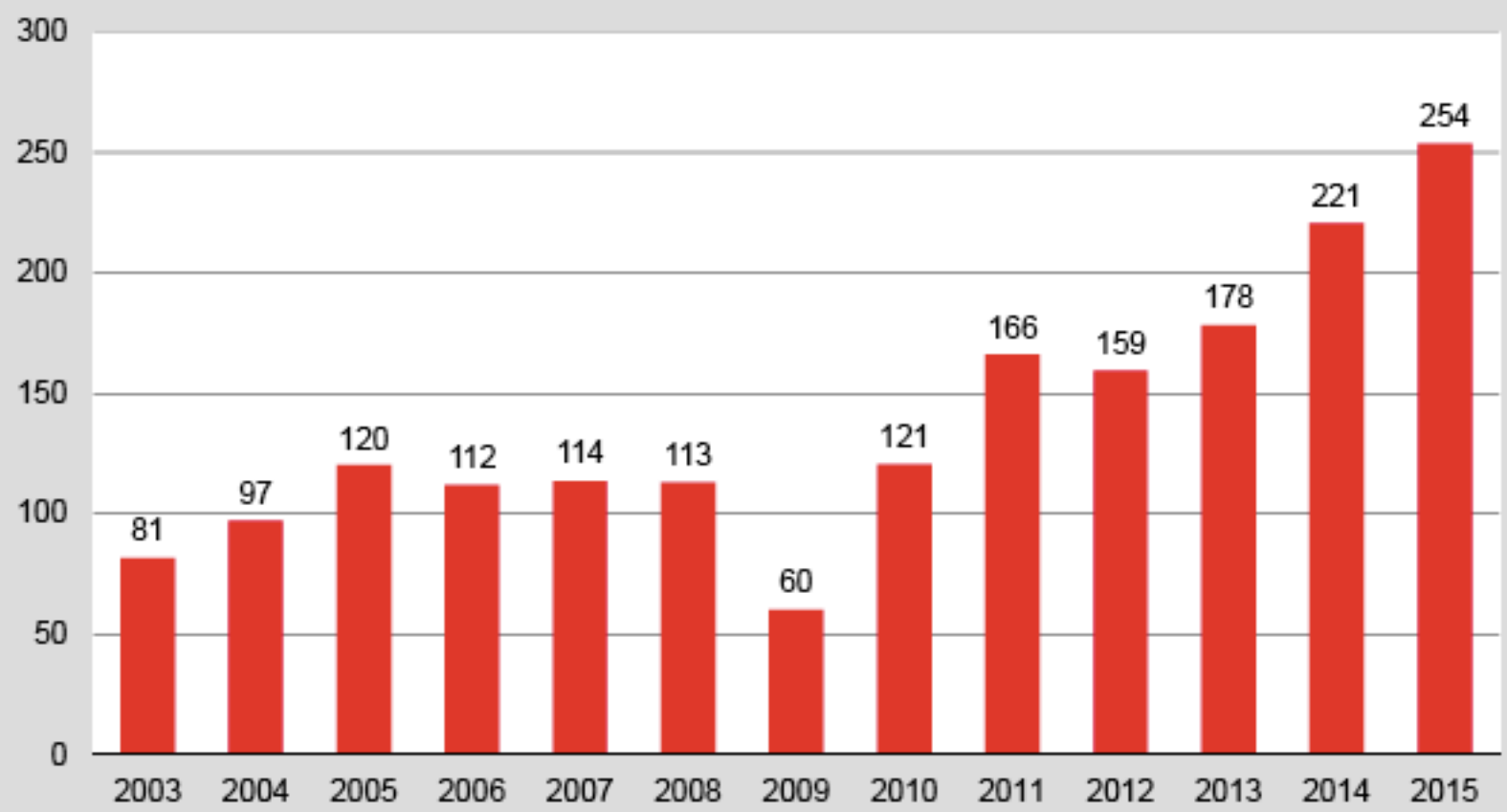


World Passenger Load Factors

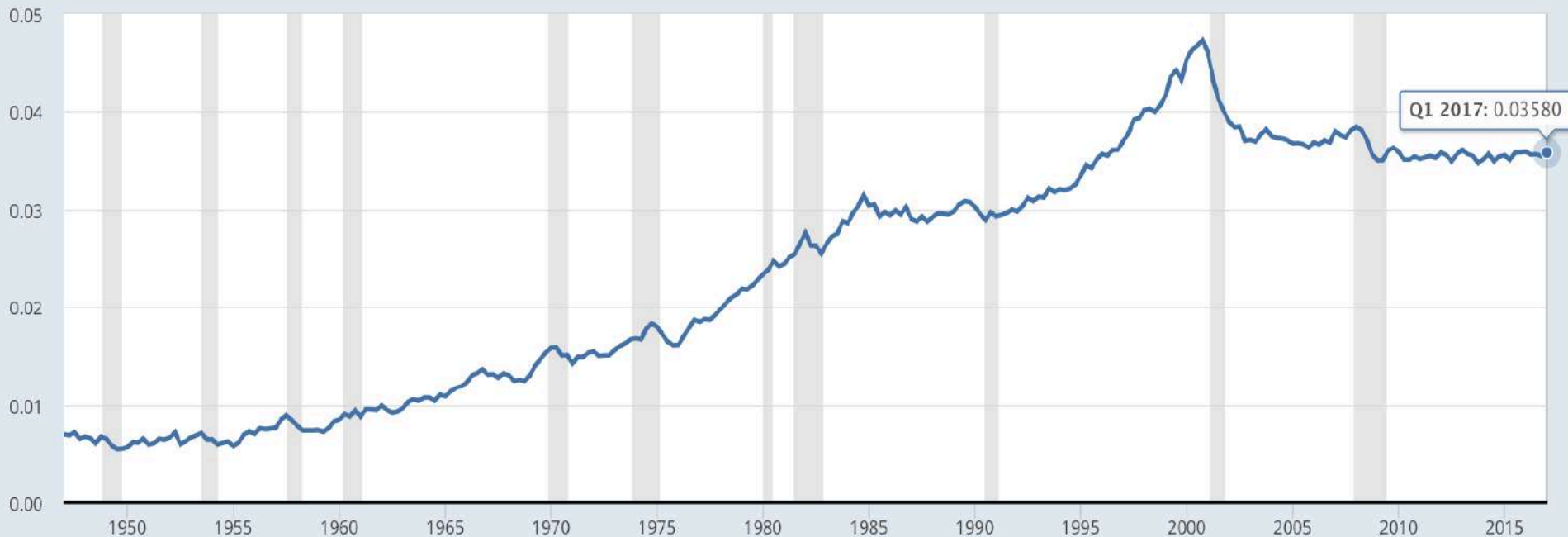


Sources: Utilization - BCA RMT; Load Factors - ICAO

World supply of industrial robots, thousands

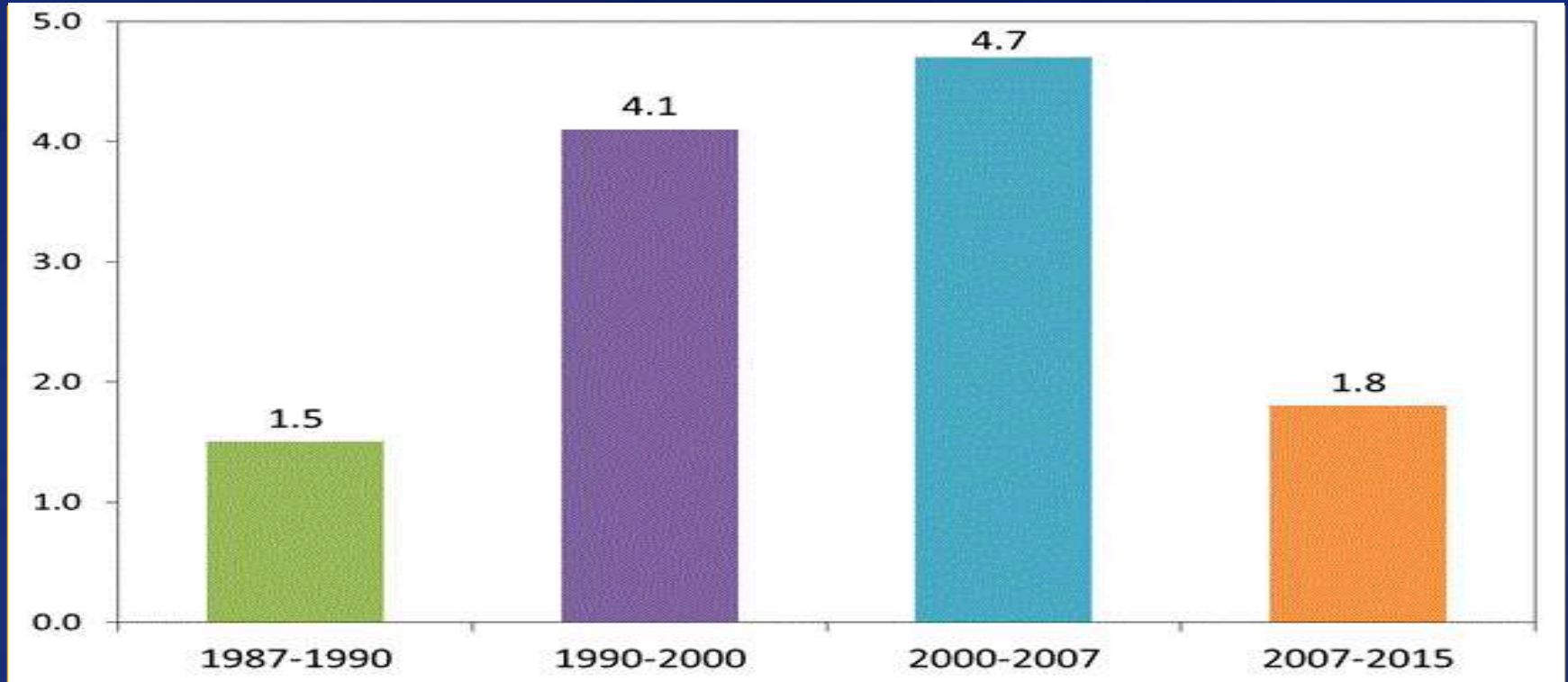


US: private fixed investment in IT, 1947-2016, as % of GDP



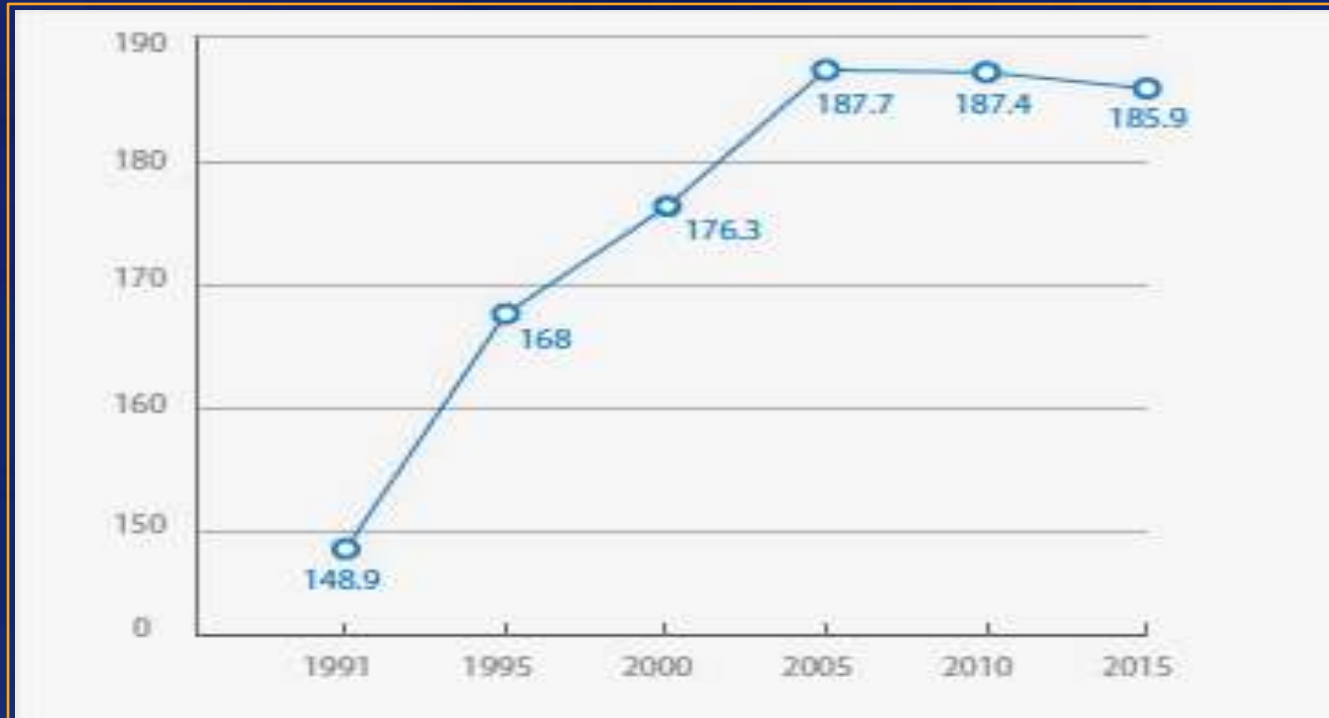
Source: FRED, Federal Bank of St. Louis, <http://research.stlouisfed.org/fred2/graph/?g=GXc>

US: manufacturing productivity rises, 1987-2015



Source: Bureau of Labor Statistics, 'Labor productivity and costs'

Germany: net capital stock per employee, 2010 €k



Source: European Commission, Economic and Financial Affairs, AMECO database



KUKA

KUKA

WARNING
DANGER
ELECTRIC SHOCK
HARMFUL RADIATION

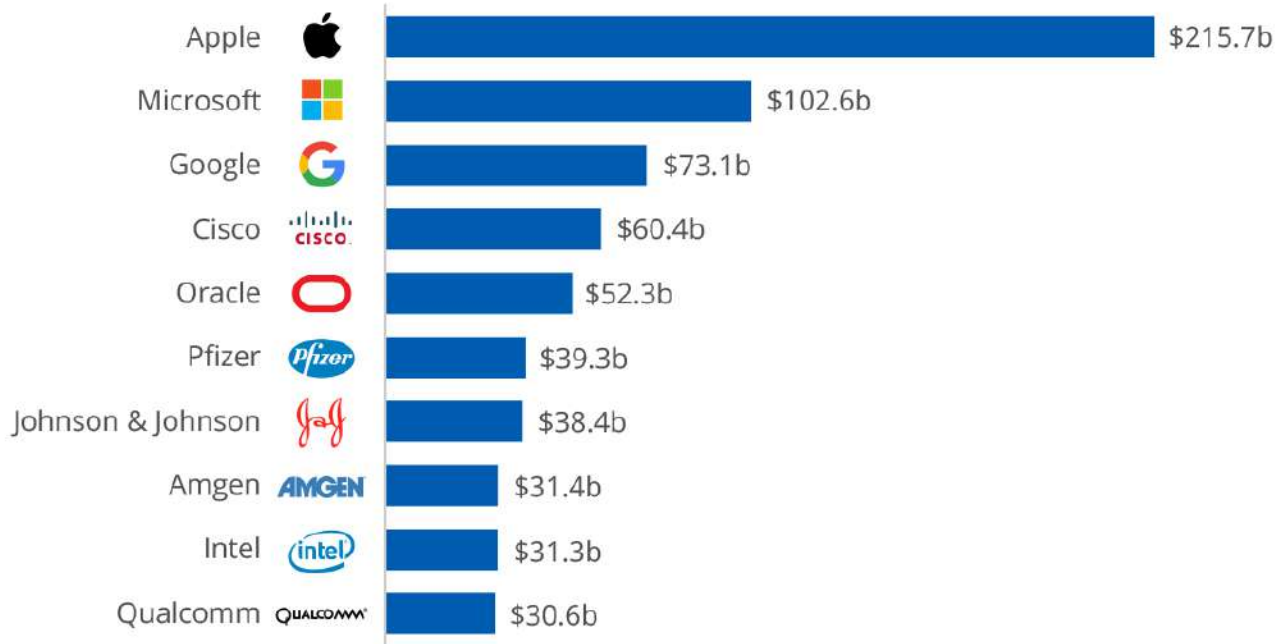


WELCOME
TO
GERMANY ♥

WELCOME
TO
WELCOMEN



Top 10 U.S. Companies by Amount of Cash Held*



* cash and cash equivalents; as of year-end 2015

US IT giants, led b



Corporate debt has become a major part of many companies' portfolios

Total portfolio comprising cash and equivalents, debt and equity securities, and investments (\$bn)

■ Corporate debt holdings*



*Of the 30 US companies with the largest portfolios, 24 disclosed their corporate bond holdings.

Corporate debt holdings includes ownership of commercial paper.

Source: FT research from company filings

IT giants = banks

US IT giants, led by Apple and aided by GE, Amgen and Ford, are **major buyers of corporate debt**

In China, **Alibaba** and **Tencent** **receive salaries** and **pay consumer outgoings**, too

Capex realities

Slowing **productivity**
growth

Growing **financialisation**

Automation?

More talk than action

**UX: in a congested,
tight world, demand
for infrastructure often
exceeds supply**

What do I do back at the office?

C. Use **any appropriate method** to detect **customer Goals**



Extended Warranty

Excluded
Not Covered
No Way
Forget It
Yea Right

A woman with dark hair, wearing a headset and a purple top, is looking thoughtfully to the side. In the background, another person is visible working at a computer. The image has a blue border on the left and right sides.

**SIR, CAN I PLACE
YOU ON HOLD AND
TELL MY
COWORKERS
HOW MUCH OF A
DUMBASS YOU
ARE?**

What do I do back at the office?

C. Use **any appropriate method** to detect **customer Goals**

D. **Don't buy the hype** about **customer delight!** **Don't try to fool people** with **branding BS!**

What do I do back at the office?

C. Use **any appropriate method** to detect **customer goals**

D. **Don't buy the hype** about **customer delight!** **Don't try to fool people** with **branding BS!**

E. **Get the basics right,**
with **high capex, high-**
productivity reliability

**Services: when
value chains are
multi-player**





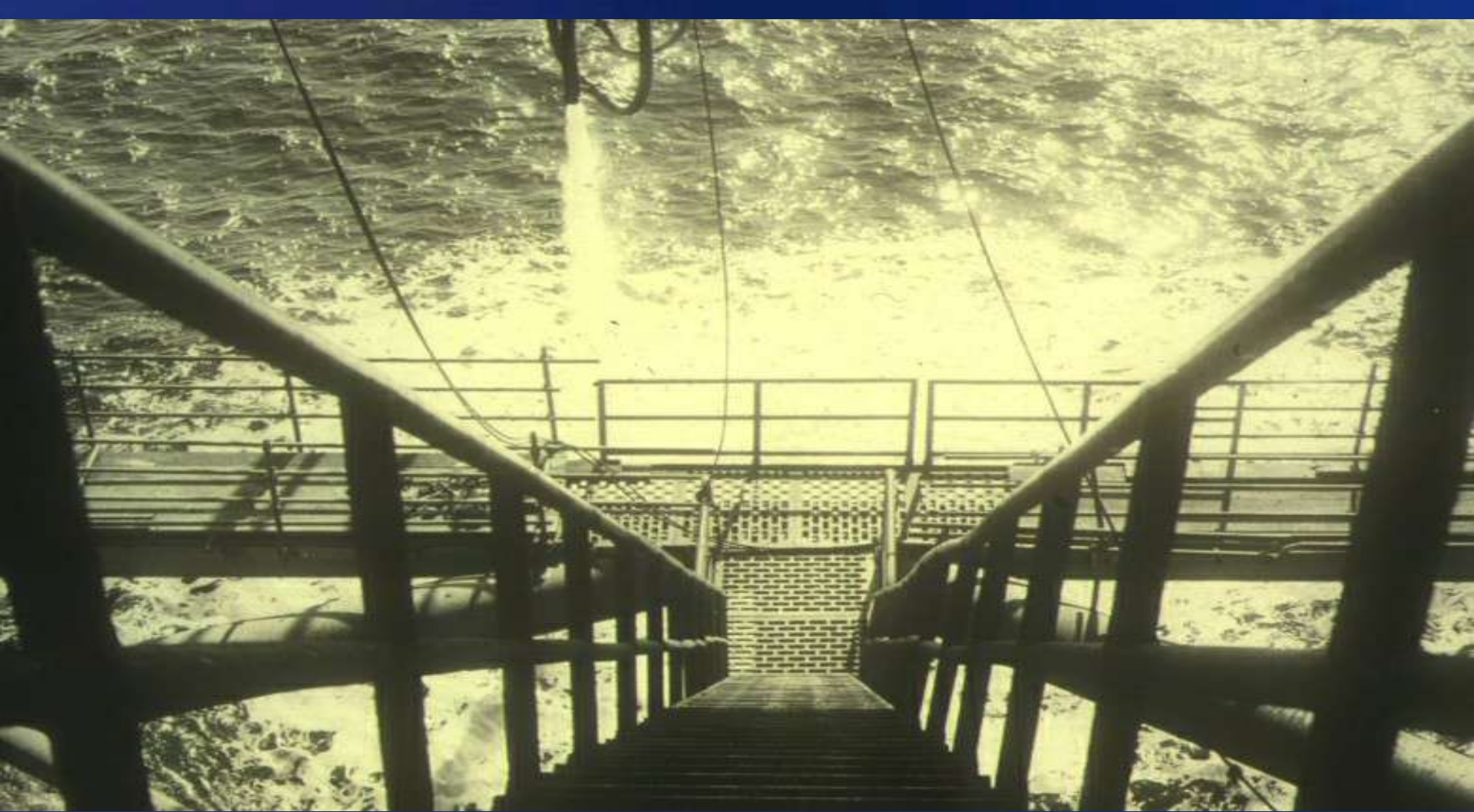


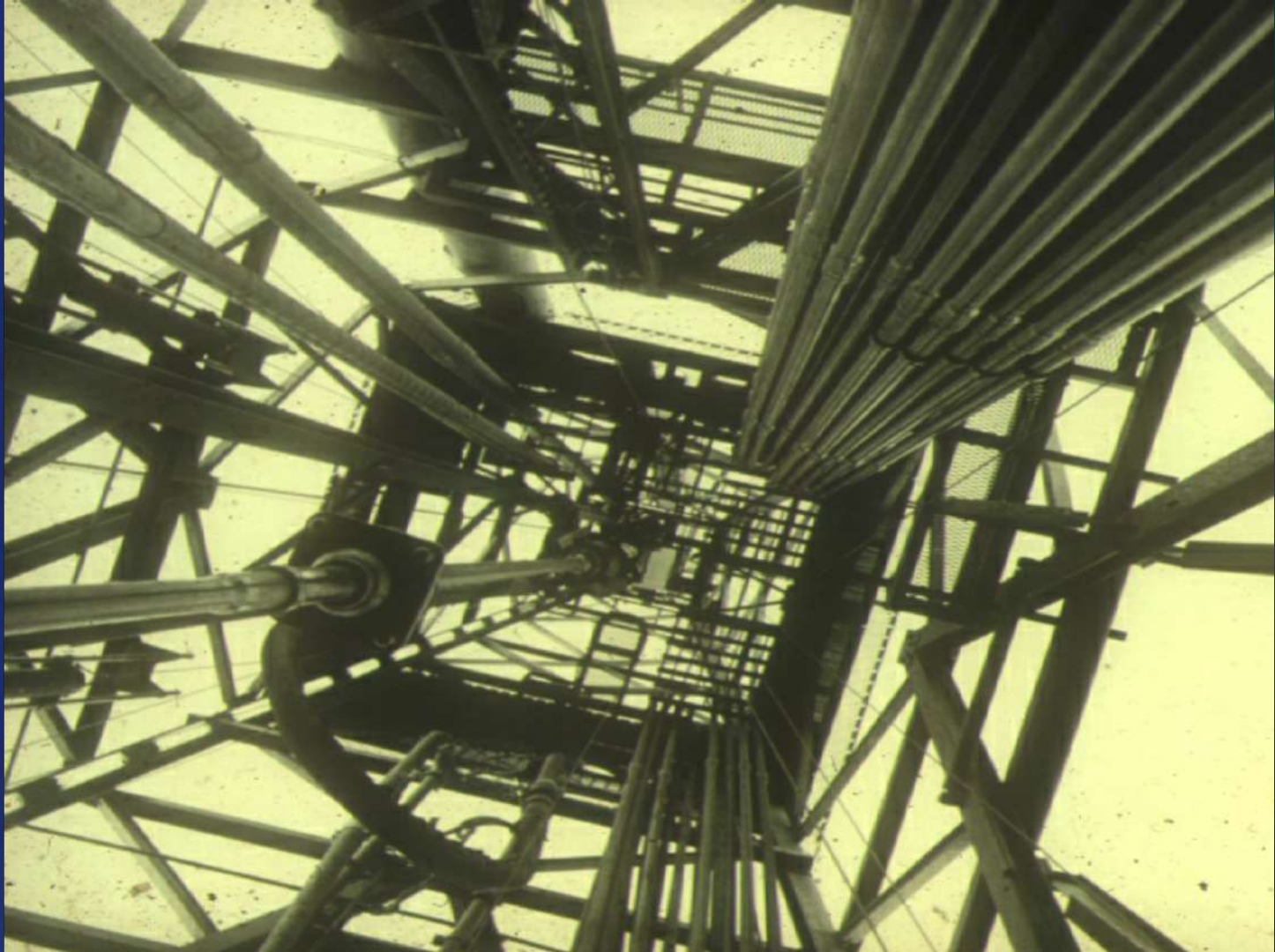








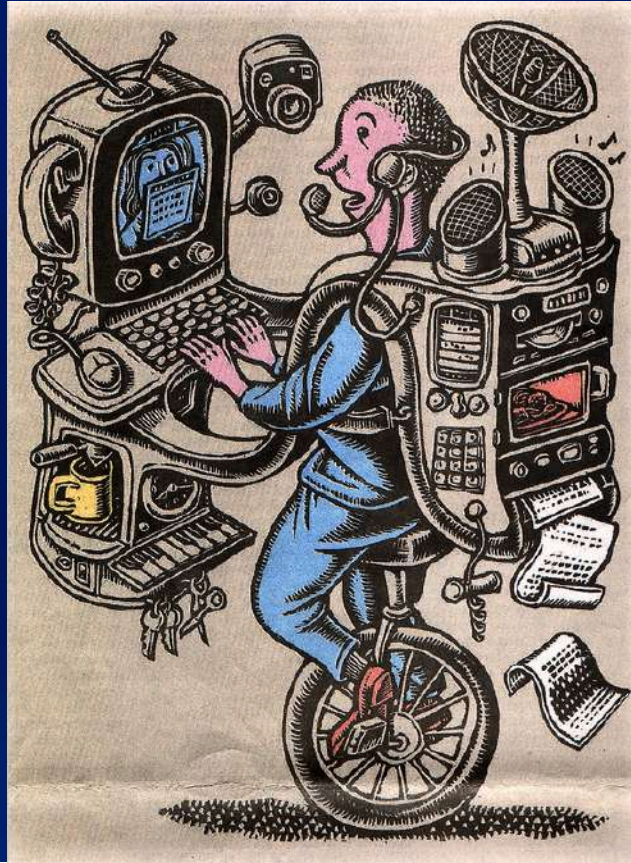








'Combo gadgets don't measure up',
Wall Street Journal, 25 April 2001





BA COMPUTER FAILURE



Low capex +
multi-player supply chains

=>

Queues, delays and chaos
become a way of life

What do I do back at the office?

F. Get into the **IoT**, **cooperate** to beat **incompatibilities**

G. Get into **Things!**

H. Grow skills in **mass communication**,
data integration

The sociology of UX, 2022+





Restaurants' loud music proves a turn off for diners

Good Food Guide
criticises rise in
noise levels as it
picks top venues

By **Katie Morley**
CONSUMER AFFAIRS EDITOR

GOOD food, great wine, and

has a buzzing, vibrant atmosphere, but it becomes exhausting and self-defeating when, as one old hand told us: 'I have never heard such loudly amplified music in an eating place. It was so loud that I couldn't hear a word the waitress was saying, and vice versa. We had to gesture and point.'

THE SLEEP REVOLUTION

TRANSFORMING YOUR LIFE,
ONE NIGHT AT A TIME

NEW YORK
TIMES
BESTSELLER



AUTHOR OF THE #1 NEW YORK TIMES BESTSELLER *THRIVE*

ARIANNA HUFFINGTON

"I DARE YOU TO READ THIS BOOK AND CARRY ON DEPRIVING YOUR BODY
(AND SOUL) OF THE NIGHTLY NOURISHMENT IT SO DESPERATELY NEEDS."

—SUSAN CAIN, AUTHOR OF *QUIET*

SLEEPING YOUR WAY TO THE TOP

How to Get the
Sleep You Need
to Succeed

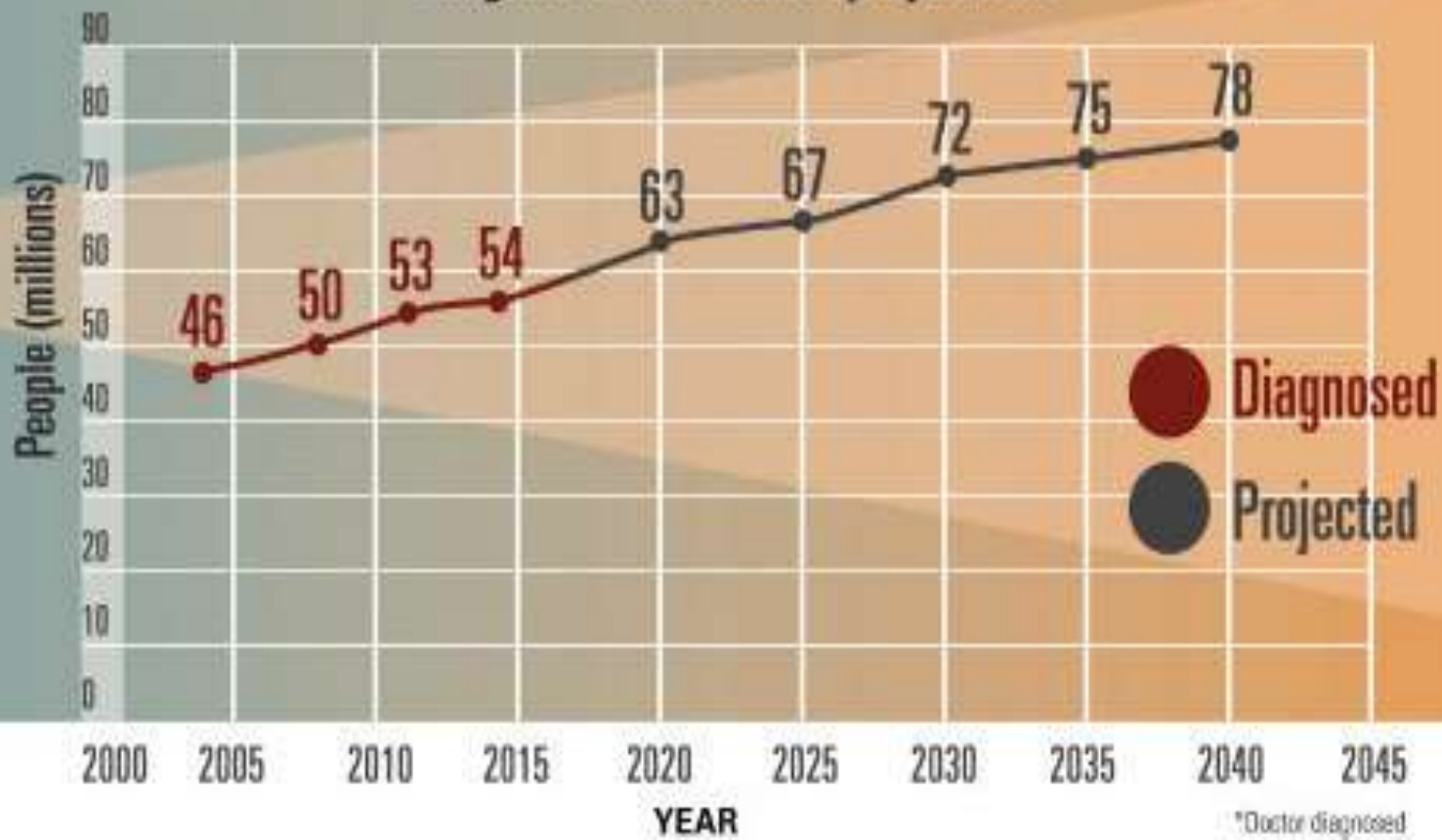
TERRY CRALLE, RN, and W. DAVID BROWN, PhD, with WILLIAM CANE





ARTHRITIS will INCREASE as the population grows and ages

Diagnosed and future projections*





PERSONAL HEALTH

O.C.D., a Disorder That Cannot Be Ignored

By JANE E. BRODY OCTOBER 13, 2014 12:10 PM 80 Comments



Economy seats for the Airbus A350, by PriestmanGoode





What do I do back at the office?

I. Grow skills in **oldies**,
acoustics, **sleep**,
arthritis, **hygiene**

2 Data on customer goals

Both private and public data mainly treat **Attitudes, Behaviour** and **Circumstances**, not **underlying goals**

Goals => human **talent and purpose**, not just needs

Interrogate myths about stakeholders, customer loyalty, UX, etc

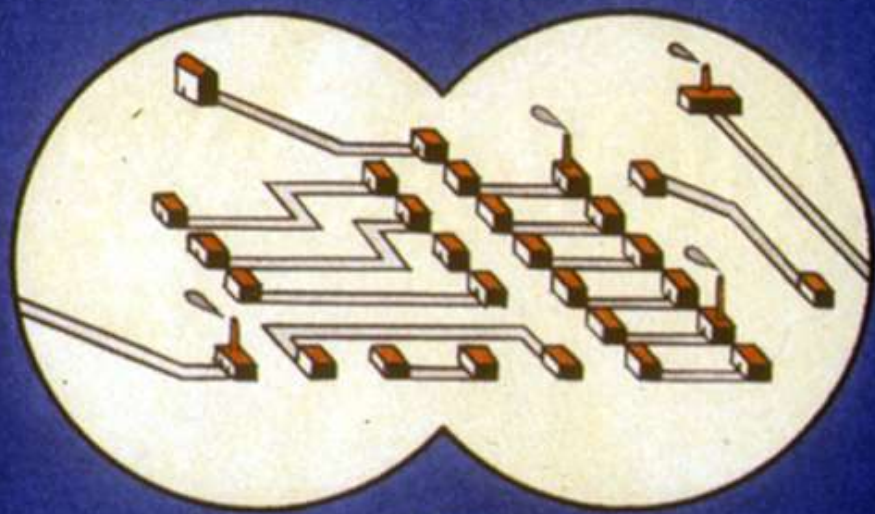
3 Data on the Context for (1) & (2)

3 Data on the Context for (1) & (2)

Much data is **in the**

public domain –

including **data on Asia**



M. GILBERT

3 Data on the Context for (1) & (2)

Much data is in the public domain – including **data on Asia** !

Track **every rival and cyberthreat**

Future events: sources

Anniversaries, birthdays

Outer space

Book launches

Concerts

Elections

Fashion

Movie premieres

Regulations

Sports fixtures

Wikipedia

NASA

Amazon

www.pollstar.com

Economist, World in 2018

Womenswear Daily

Variety

EU, FDA, FCC, FAA

Sports Illustrated

3 Data on the Context for (1) & (2)

Much data is in the public domain – including **data on Asia** !

Track **every rival and cyberthreat**

Make a mosaic of **future
Zeitgeist events**

3 Data on the Context for (1) & (2)

Much is public – including **Asian data**

Track **every rival and cyberthreat**

Make a **mosaic** of **future events**

Experiments & prototypes

create data, turn

Uncertainty into

Quantifiable Risk

Your 'Minimum Viable Innovation System'

“...will not require years of work, fundamental changes to the way the organization runs, or a significant reallocation of resources...”

Source: Scott Anthony, David Duncan, Pontus MA Siren, 'Build an innovation engine in 90 days', *Harvard Business Review*, December 2014



Use Drucker's objectives in experiments!

“...most organizations are reluctant to fund proper business experiments and have considerable difficulty executing them ”
Doable; abide by; reliable; sweated



So, back at the office...

- Demand **more ambition** than a Minimum Viable Innovation System
- Build a **formal culture** of **experiments** and **prototypes**

**Do wider, deeper,
more and better-
funded R&D !**



Thank you!

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