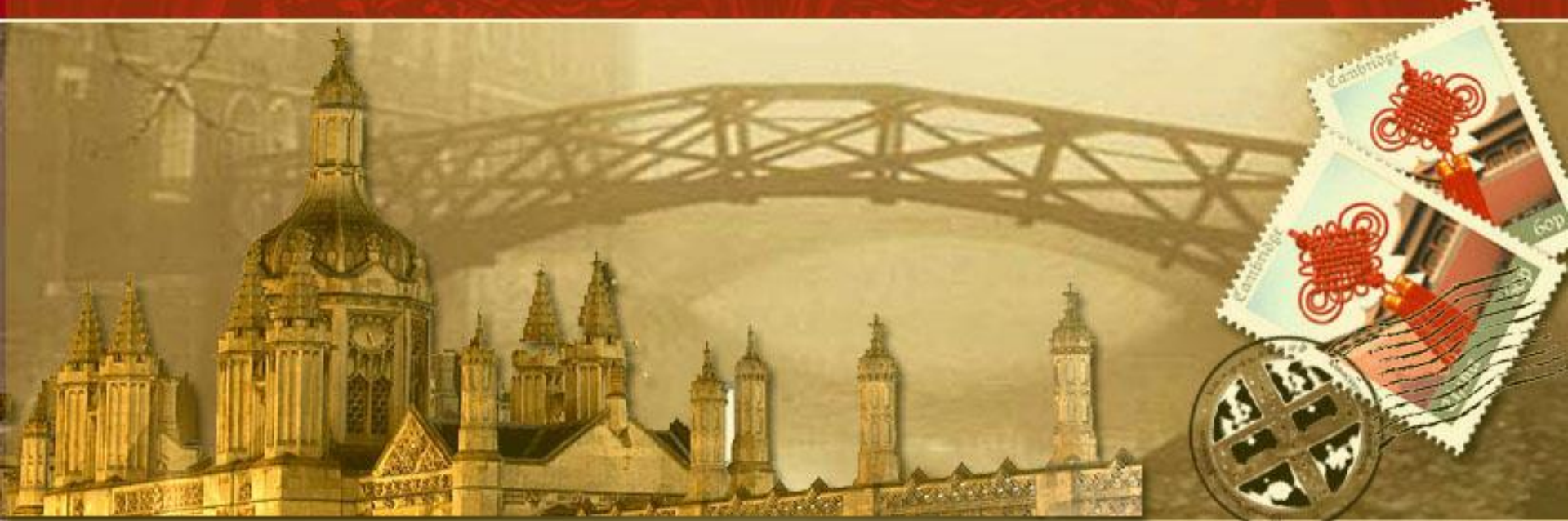


# Chinese Students & Scholars Association in Cambridge



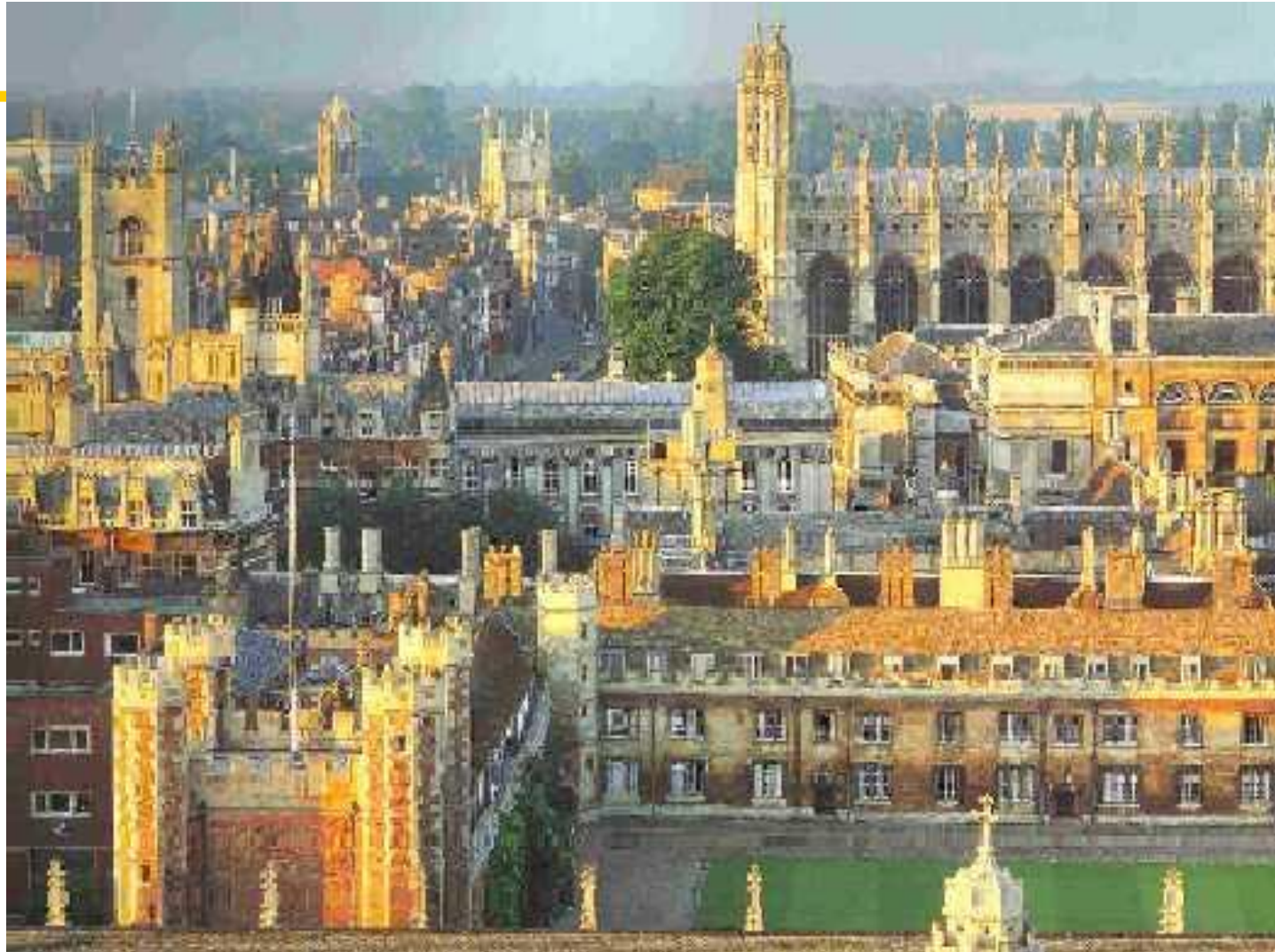
## China and The World in the “*Age of the Entrepreneur*”

### Opportunities for Global Growth as *East Meets West*

Professor Alan Barrell

September 21<sup>st</sup> 2008 – Darwin College, Cambridge





# Trinity College's History and Scientific Development – Cambridge *Pride*



- Trinity had a strong ***scientific tradition\****
- First use of the word “***scientist***” 1835 (Whewell)
- ***First European Science Park*** – 1970 – Dr Sir John Bradfield

\*Alumni include Newton, Clerk-Maxwell, Rayleigh, Thomson, Walton, Rutherford, Aston, Lyle, both Braggs, Bohr, Hopkins, Klug, Kendrew















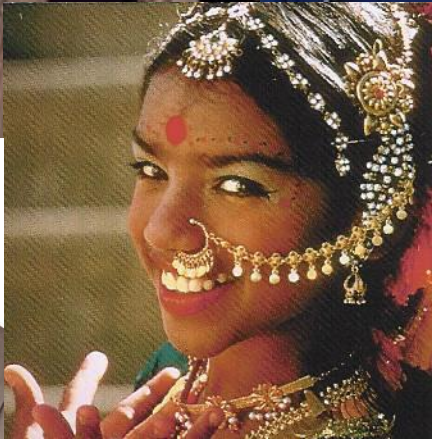
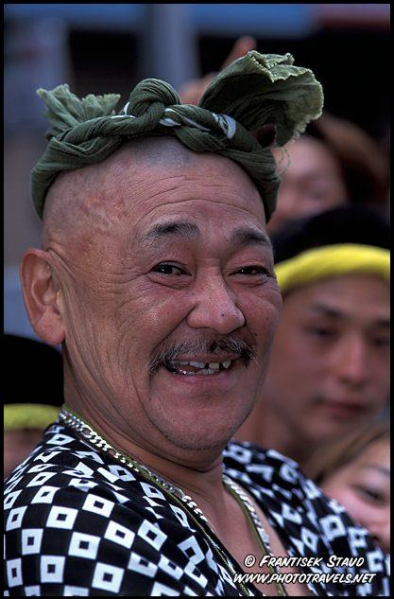
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ZHANG HAIHUA  
GEOFF BAKER

# Think Like Chinese

THE FEDERATION PRESS





# Our Agenda

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- Today's Meanings – What IS **Globalisation**?
- CHANGE – there's a lot going on !
- Continental Contexts and Comparators – The Americas, Europe ( “old and new”), The Middle East, Africa and Asia
- And What IS an Entrepreneur ? Is the “**entrepreneurial mindset**” important ? **HEROES** – *A lot about some of them*
- Attitudes and Postures – Partnerships and Competitiveness
- “The Tiger and the Elephant” – China and India
- The Future – what WILL Globalisation be ? What will it mean?
- Globalisation, People, Companies and Society – Reflections – Words for **The Next Generation**



# Globalisation – What is it ?

---

- Dictionaries have NO definition !
- GLOBAL – Chambers English Dictionary –  
“Spherical, worldwide, affecting or taking into consideration the whole world or all peoples”

Coca Cola and McDonalds would like this definition !



# Globalisation and Anglobalization – were the British responsible ?

---

- Richard Cobham – British Businessman, Politician and Economist – mid 1840s.....

“An economically determined phenomenon, in which the free exchange of commodities and manufactures tends to unite mankind in the bonds of peace”

“A damnably resilient international capitalism”

Anon



# NIALL FERGUSON



'The most brilliant British historian  
of his generation' *The Times*



# EMPIRE

HOW BRITAIN MADE  
THE MODERN WORLD

THE INTERNATIONAL BESTSELLER



# George Bush on Globalisation

---

- “Well,....we in the US have the best system – we call it DEMOCRACY!” It is GREAT for ALL the World !
- But we have our views and standards – as True Democrats !( even us Republicans ! )
- The PEOPLE have a voice, which we expect to reflect our beliefs !
- Why the “nether regions” of the world don’t understand our Democratic Values – is a puzzle to me !
- We KNOW our system is THE BEST ! We **KNOW** !
- America is leading the World – and will do so for ever and ever ! - AMEN





# The Economist

FEBRUARY 26TH - MARCH 4TH 2005 www.economist.com

New cheer for the Tories

BAGEHOT, PAGE 36

The damage to Sinn Fein

PAGE 27

Universities as global businesses

PAGES 77-79

Al-Jazeera and the Arab media battle

PAGES 23-25

## Merci, y'all

(But why the heck are you selling arms to China?)



# The Economist

MAY 21ST-27TH 2005

www.economist.com

Set Oxford free

PAGES 14 AND 27

Italy, the sick man of Europe

PAGES 11 AND 74

Time to revalue China's yuan

PAGES 10 AND 85

**INTERNATIONAL BANKING**

A SURVEY, AFTER PAGE 62

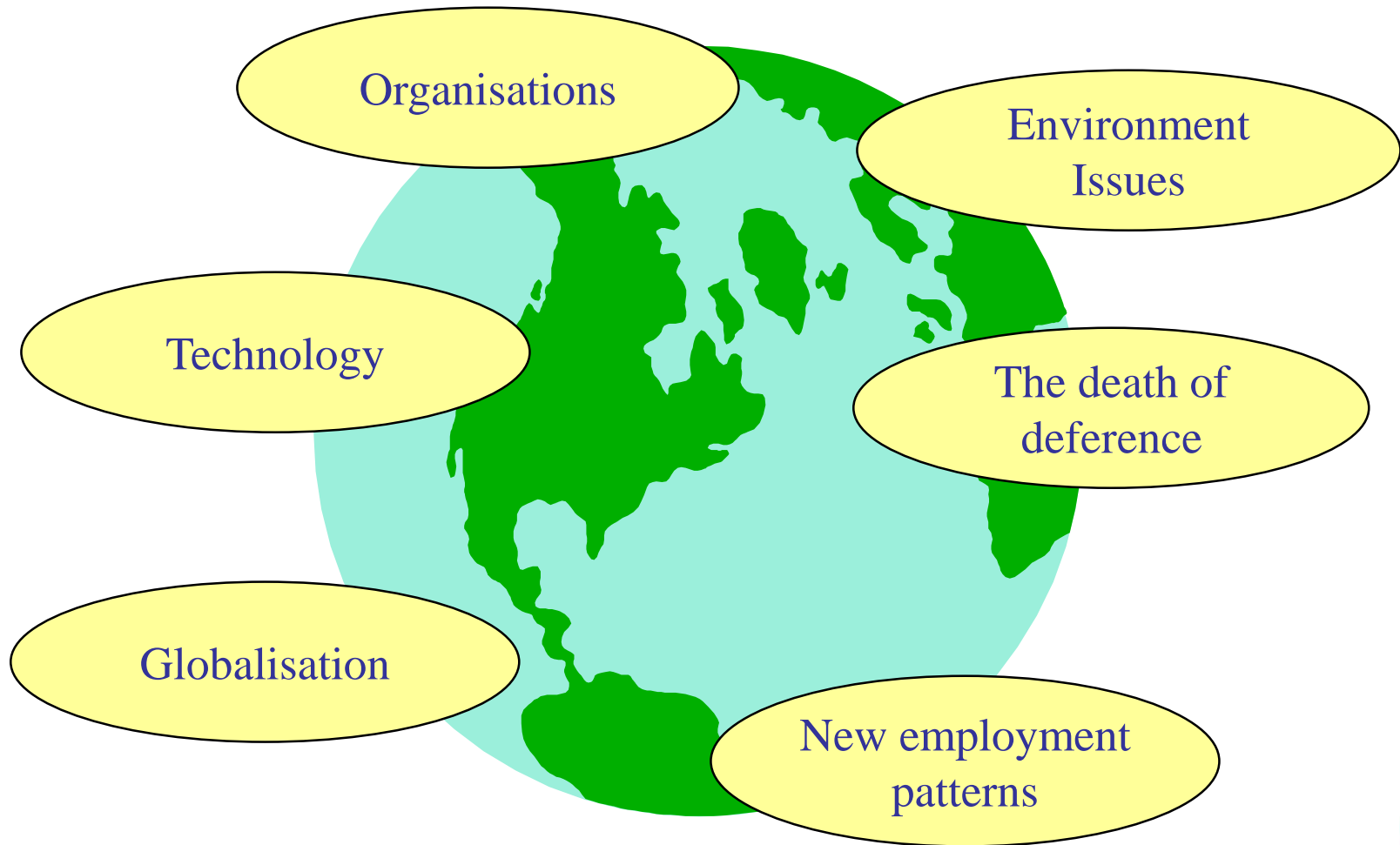
## Damaged goods

The world's best variety still needs improvement



# The Changing Horizon

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# The World in Transformation – Changes coming ever Faster

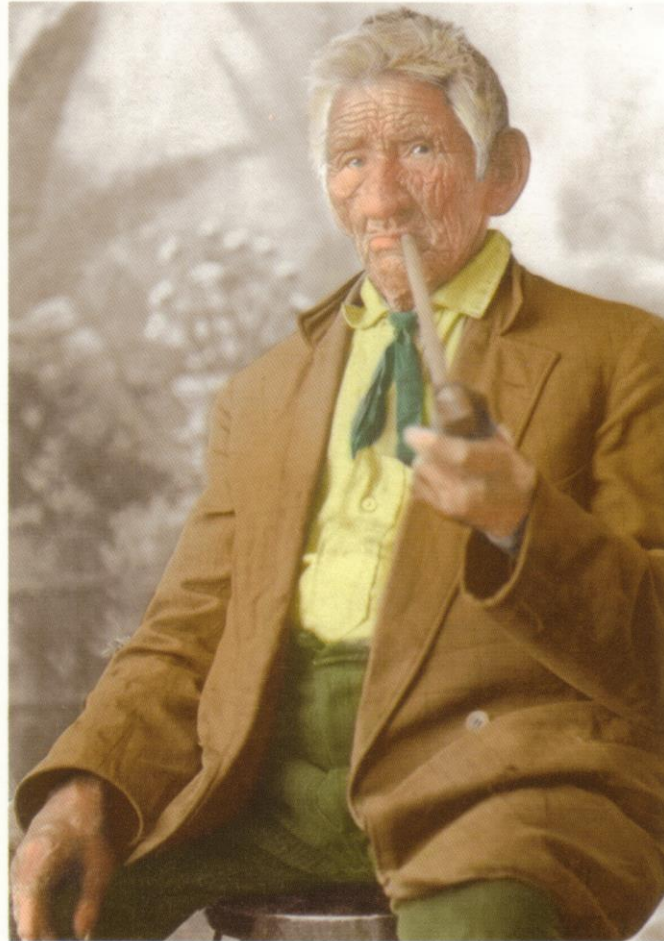
---

- Speed of Communication – Removal of Distance
- Globalisation – and EU Enlargement
- Sources of Security
- Flattening of Structures – Networks not Hierarchies
- Entrepreneurial Opportunities
- Impact of Technology
- New Skills Learning
- Permanent “temps”
- Shifting Values and Changing Social Structures
- Rise of Asian Superpowers – China and India – and developments in South America and Eastern Europe.



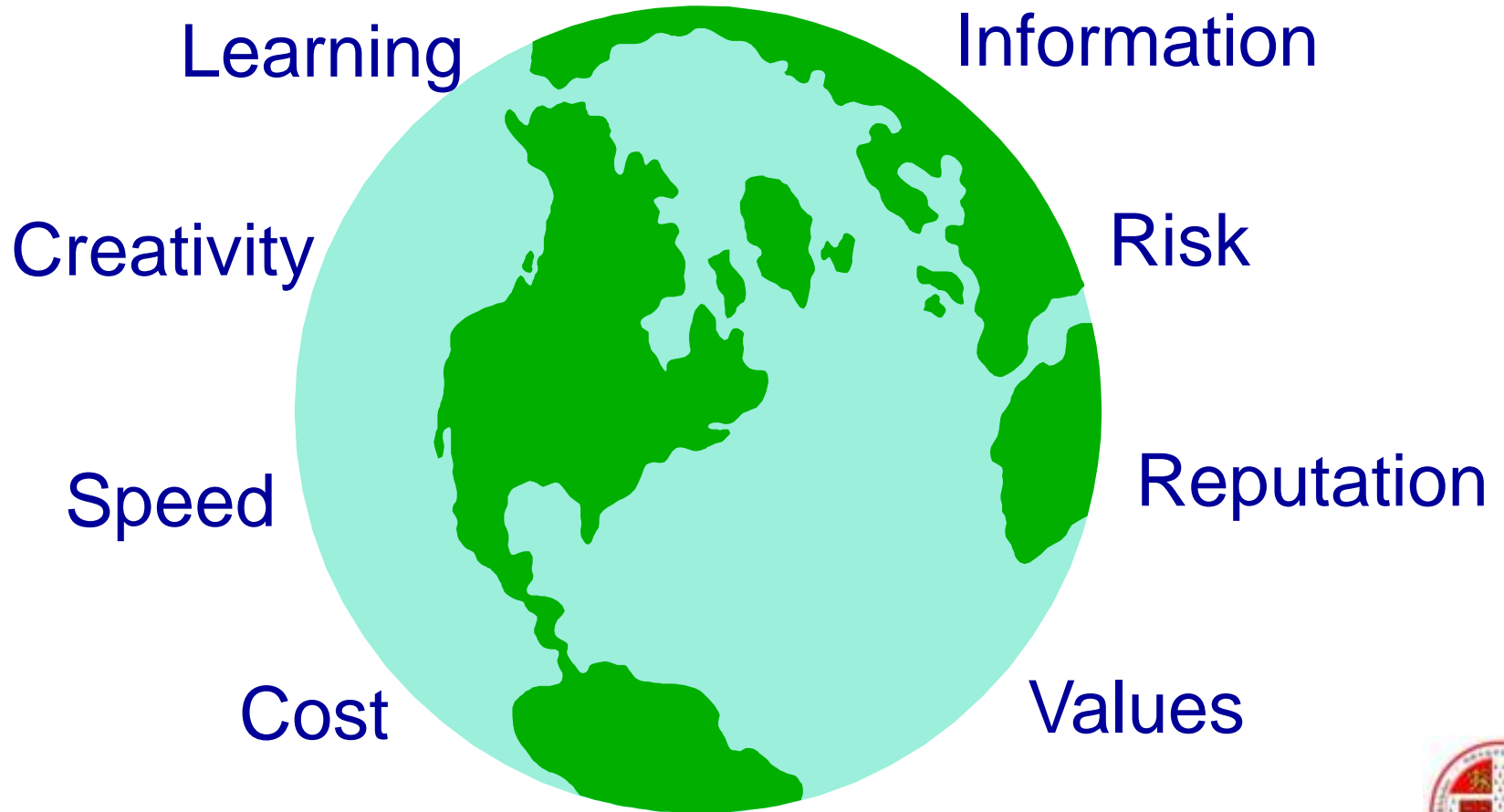
If I had known I was going to live this long  
I would have taken better care of myself

---



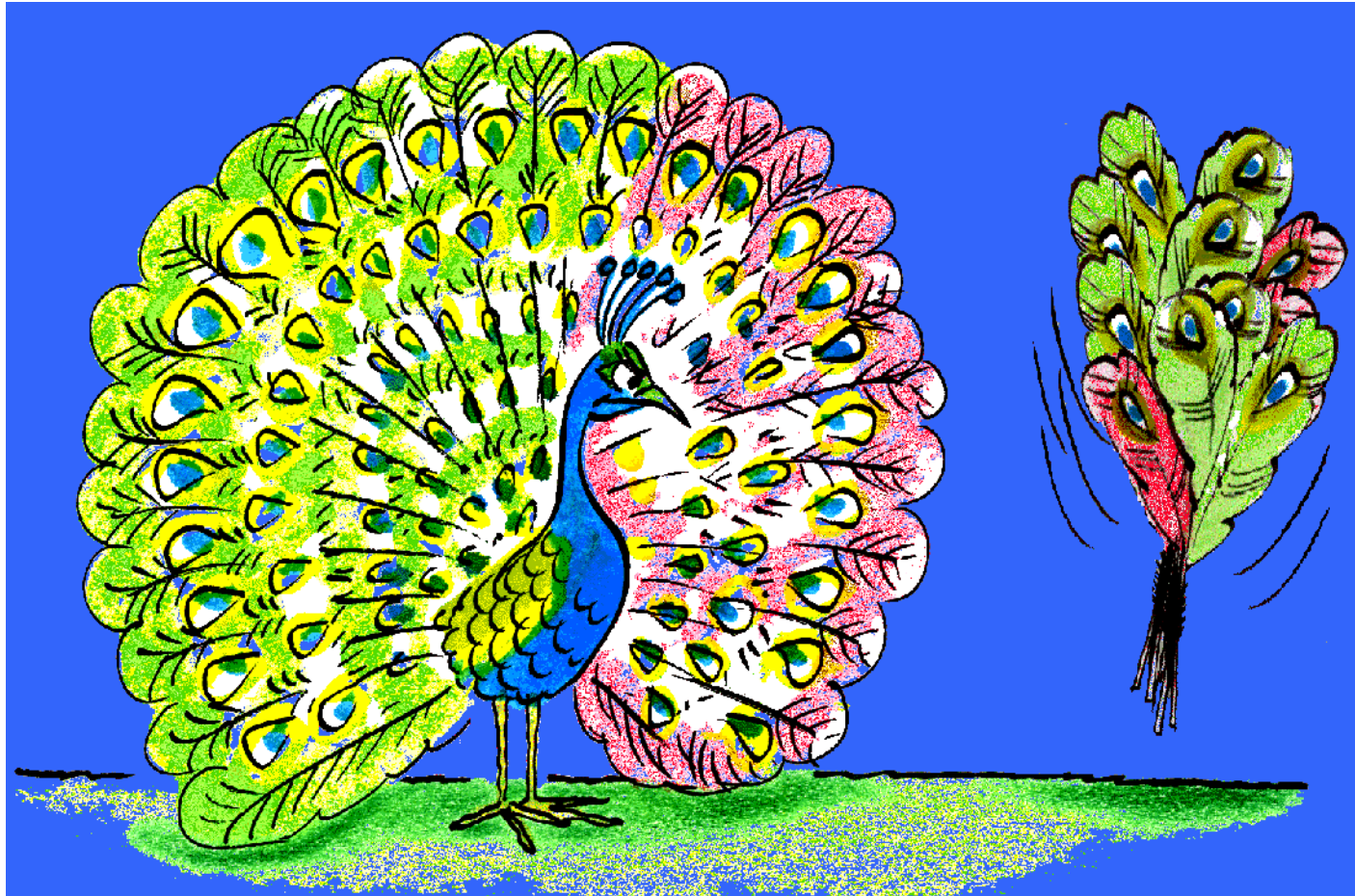
# Sources of Competitiveness

---



# The Competitive Threat

“Today’s Peacock is tomorrow’s feather duster”  
But...Co-Opetition may be better than Competition....



# The Changing Face of Globalisation

- Two fifths of the Worlds people live in the two fastest growing large economies – China and India – FACT
- Education, Wealth Creation and New Knowledge are at the heart of Economic Planning in Asia
- Rapid moves to Rand D based Economies
- “Liberating Minds”





Wharton School Publishing

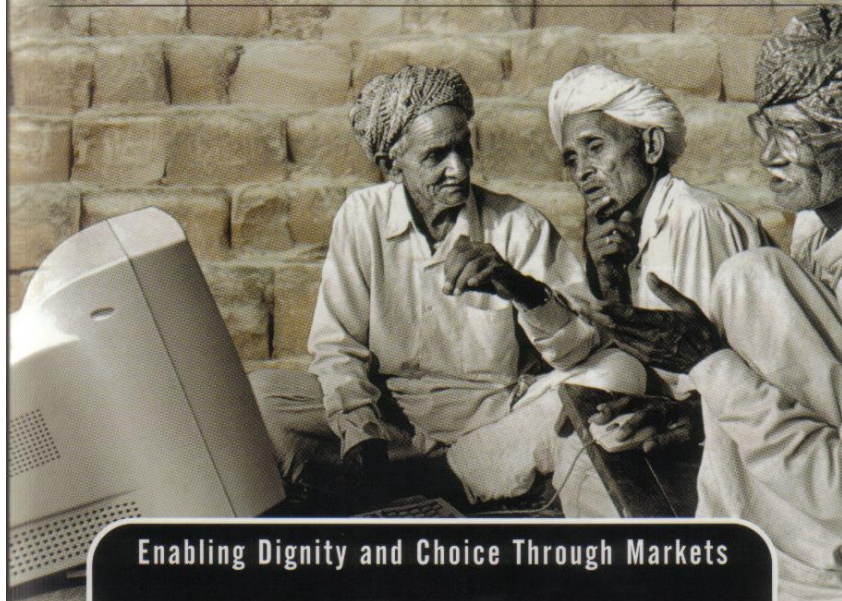
**C.K. PRAHALAD**

Co-author of the International Bestseller

*COMPETING FOR THE FUTURE*

# THE FORTUNE AT THE BOTTOM OF THE PYRAMID

ERADICATING POVERTY THROUGH PROFITS



Enabling Dignity and Choice Through Markets

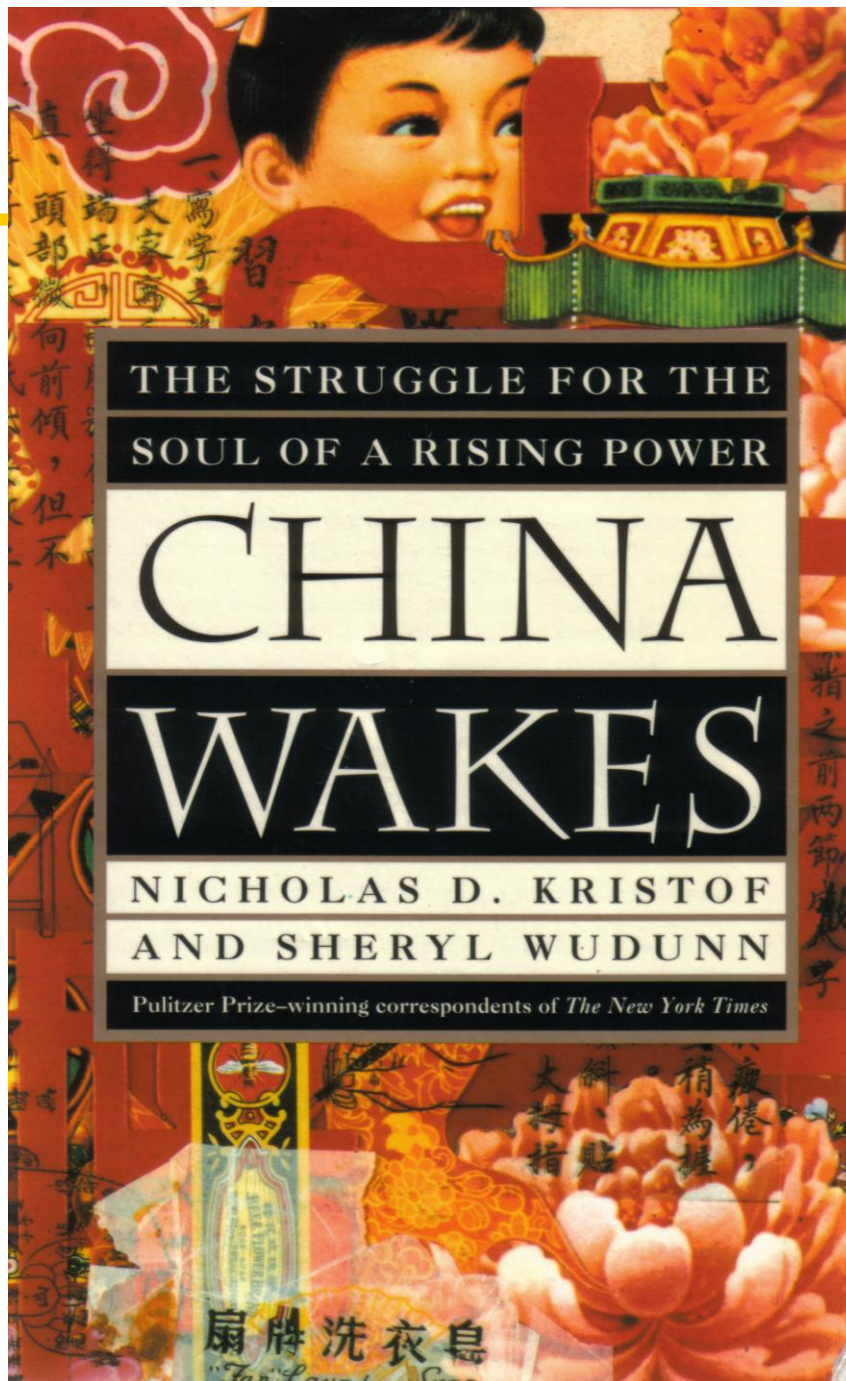


# RISING ELEPHANT

THE GROWING CLASH WITH INDIA  
OVER WHITE-COLLAR JOBS  
AND ITS CHALLENGE TO  
AMERICA AND THE WORLD

**Ashutosh Sheshabalaya**





THE STRUGGLE FOR THE  
SOUL OF A RISING POWER

# CHINA WAKES

NICHOLAS D. KRISTOF  
AND SHERYL WUDUNN

Pulitzer Prize-winning correspondents of *The New York Times*



WILLIAM H. OVERHOLT

# CHINA

The next economic  
**SUPERPOWER**



Slide 28



# Some Economic Indicators – How are key Countries doing?

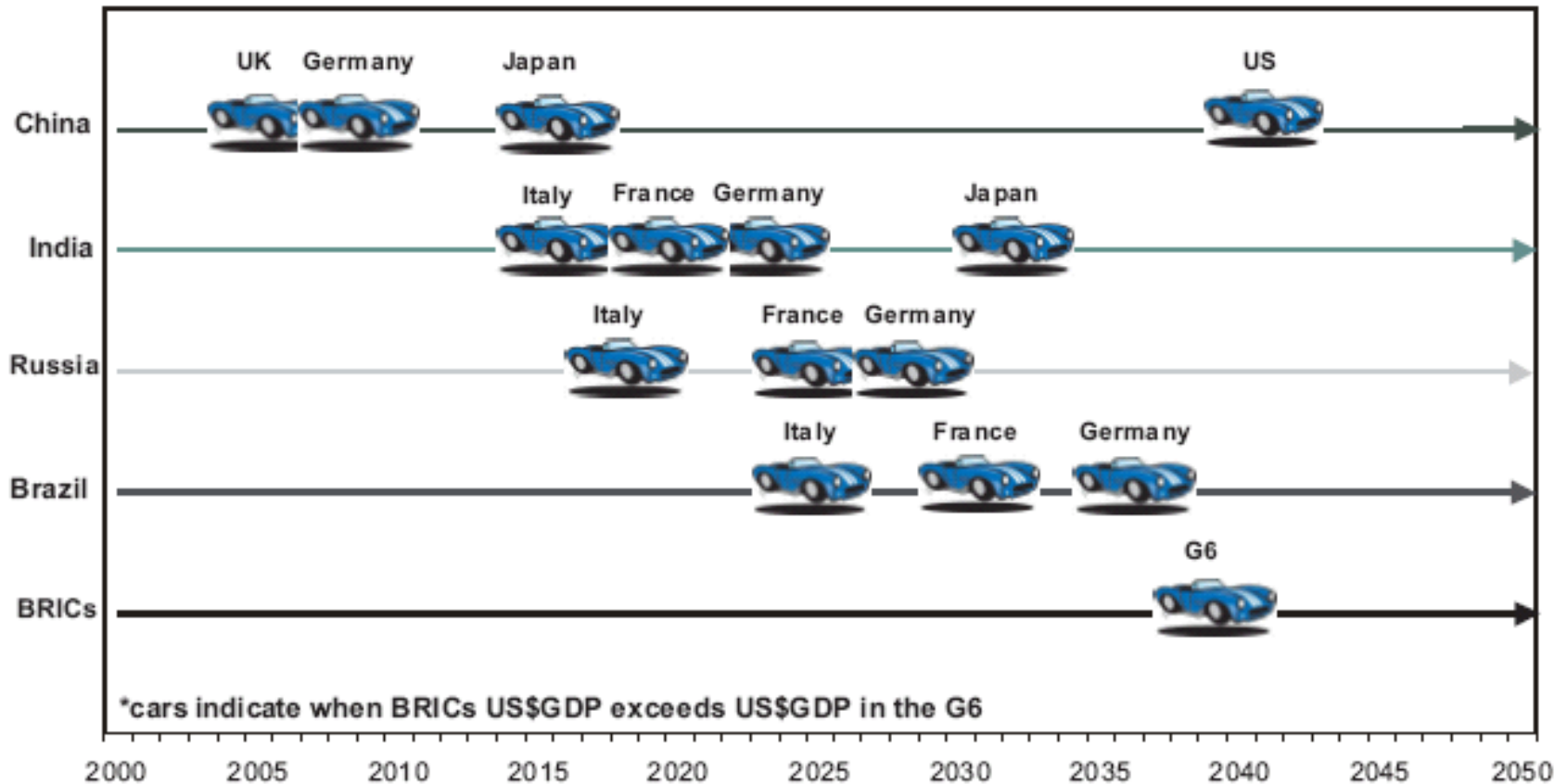
	GDP % Change	Ind. Prod. %	Trade Balance US \$ Bn	Foreign Reserves US \$ Bn
China	+ 9.5	+ 8.9	+ 51	1.8 Trillion plus
India	+ 8.8	+ 8.0	- 25	150
Britain	+ 2.9	+ 0.1	- 49	
Euro Area	+ 2.1	+ 1.0	+ 86	
USA	+ 3.9	+ 3.5	- 679	

- Can the trend continue?
- Do the Trade Balance differences matter? – India and China?



# India/China Vs The G6

Overtaking the G6: When BRICs' US\$GDP Would Exceed G6

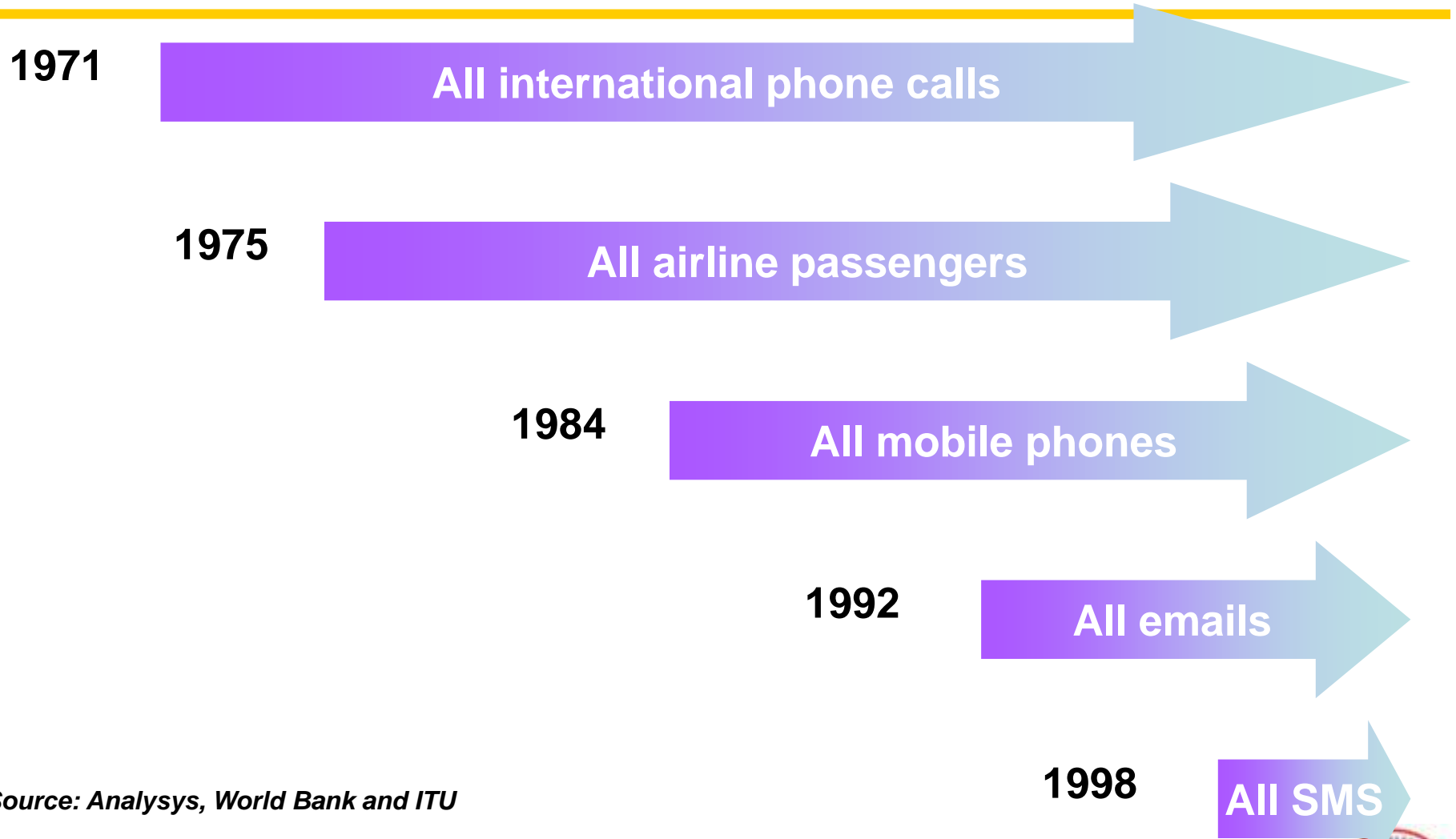


\*cars indicate when BRICs US\$GDP exceeds US\$GDP in the G6

GS BRICs Model Projections. See text for details and assumptions.



# Technology – and the *Pace of Development* – *Traffic in ONE Day in 2003 ....*

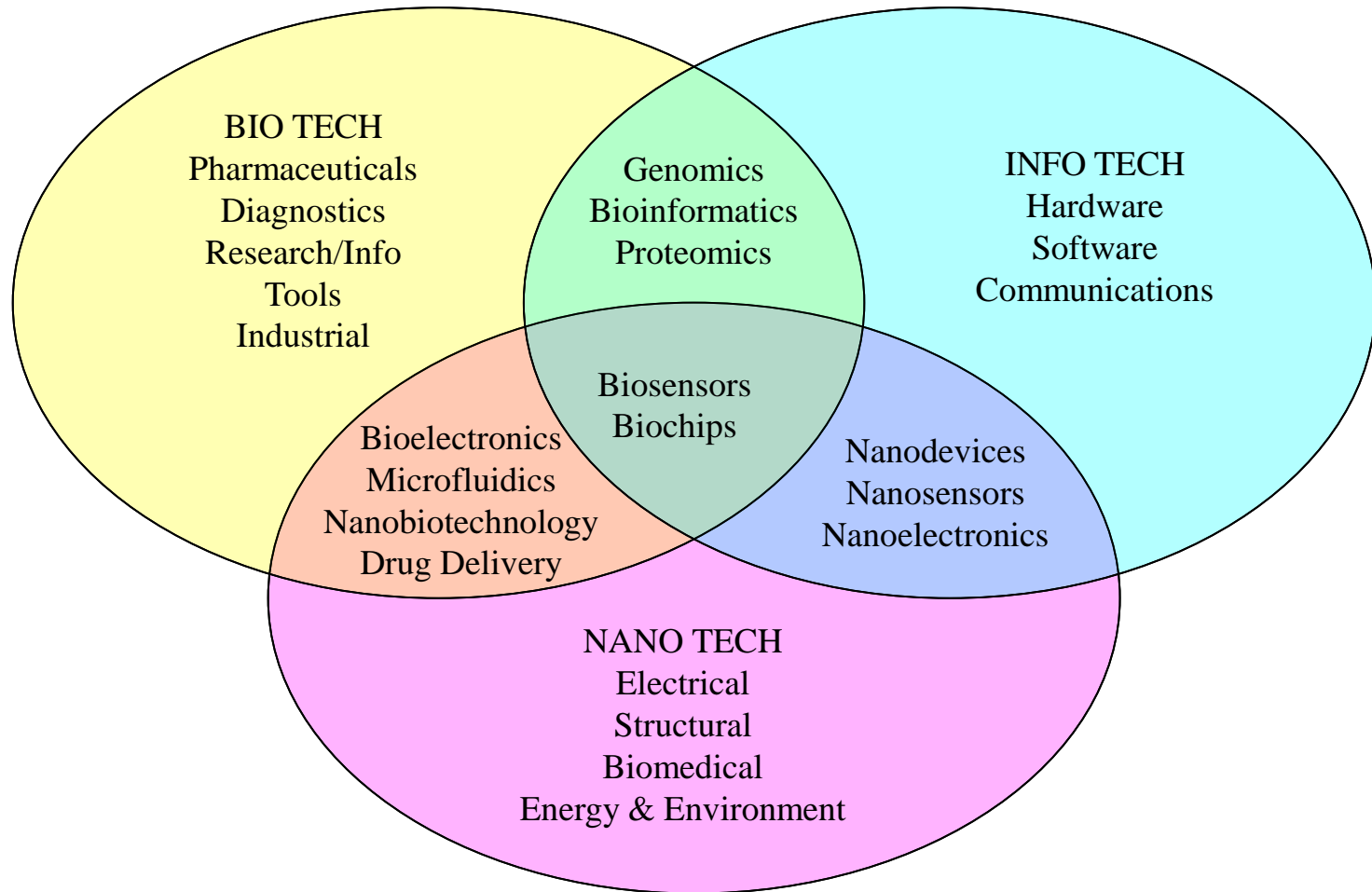


Source: Analysys, World Bank and ITU



# Three Converging Revolutions

## Three Pervasive Technology Platforms





# Innovation and Invention

---

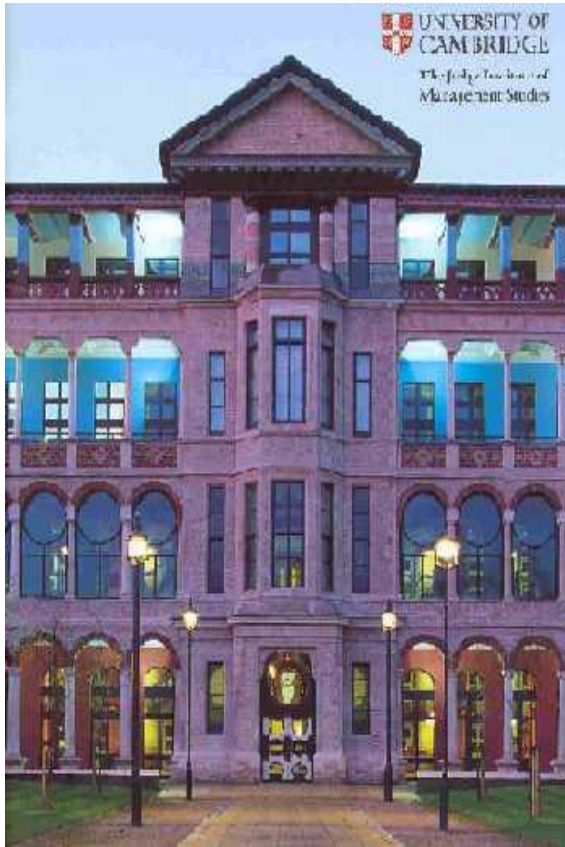
**“90% of all the scientists born in the human race are alive today”**

*Prof. John Story - INSEAD*





# Characteristics of High Technology Regions- Catalysts for Growth

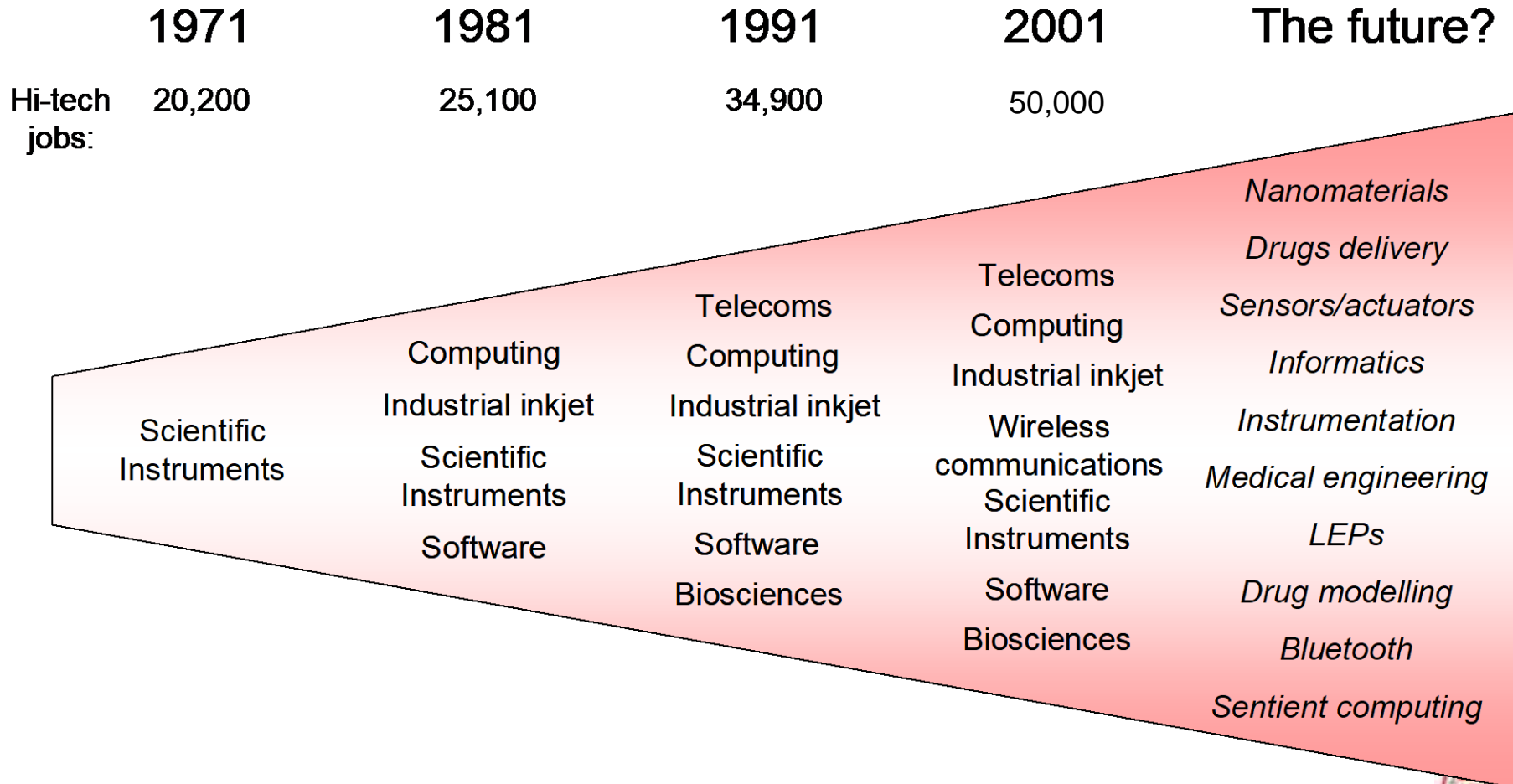


- Universities and centres of academic excellence
- Exploitable, converging Technologies
- Entrepreneurs with marketable ideas and products
- Business angels and established seed funds
- Sources of early stage venture capital
- Core of successful large companies
- Quality management teams and talent
- Supportive infrastructure
- Affordable space for growing businesses
- Access to capital markets
- Attractive living environment and accommodation

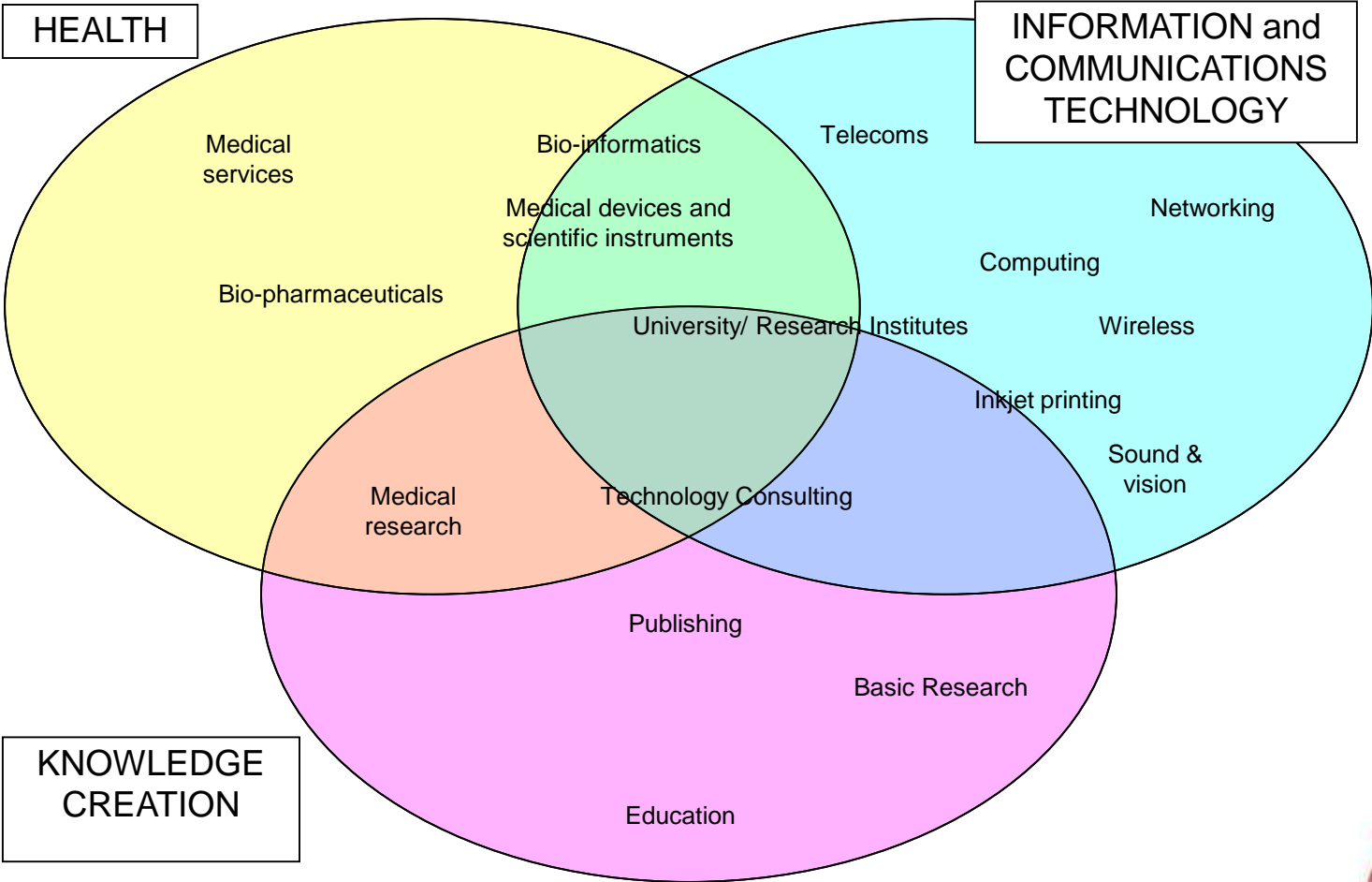
source :- Gibbons - Stanford University 1998



# The emergence of high-technology clusters in Greater Cambridge



# Overlapping Technologies support Overlapping Business Clusters



**Microsoft**  
 WindRiver  
 symbian  
 integrated systems  
 EPOC  
 Sun  
 Axe Inc  
 JAVA  
 KADAK  
 ETNOTEAM  
 Acorn  
 eL  
 GEOWORKS  
 FIRMWARE SYSTEMS  
 Tao Systems  
 Eonic  
 microware  
 ACCESS  
 U.S. SOFTWARE  
 CMX COMPACT

**Tektronix**  
**cadence**  
 CoWare  
 TEXAS INSTRUMENTS  
 hp HEWLETT PACKARD  
 Alant Communications  
 OKOGAWA  
 Mentor Graphics  
 MetaWare  
 EPI  
 Green Hills SOFTWARE  
 ADS  
 COGENT  
**SYNOPSYS**  
 cygnus LAUTERBACH



Acorn  
 TEKMEMA  
**SYMBIONICS**  
 SSL  
 SIRIUS communications  
 N1  
 ORIGIN TECHNOLOGY & BUSINESS  
 neXus  
 WIPRO  
 Virata  
 Acapella  
 GSPONS SEMICONDUCTOR

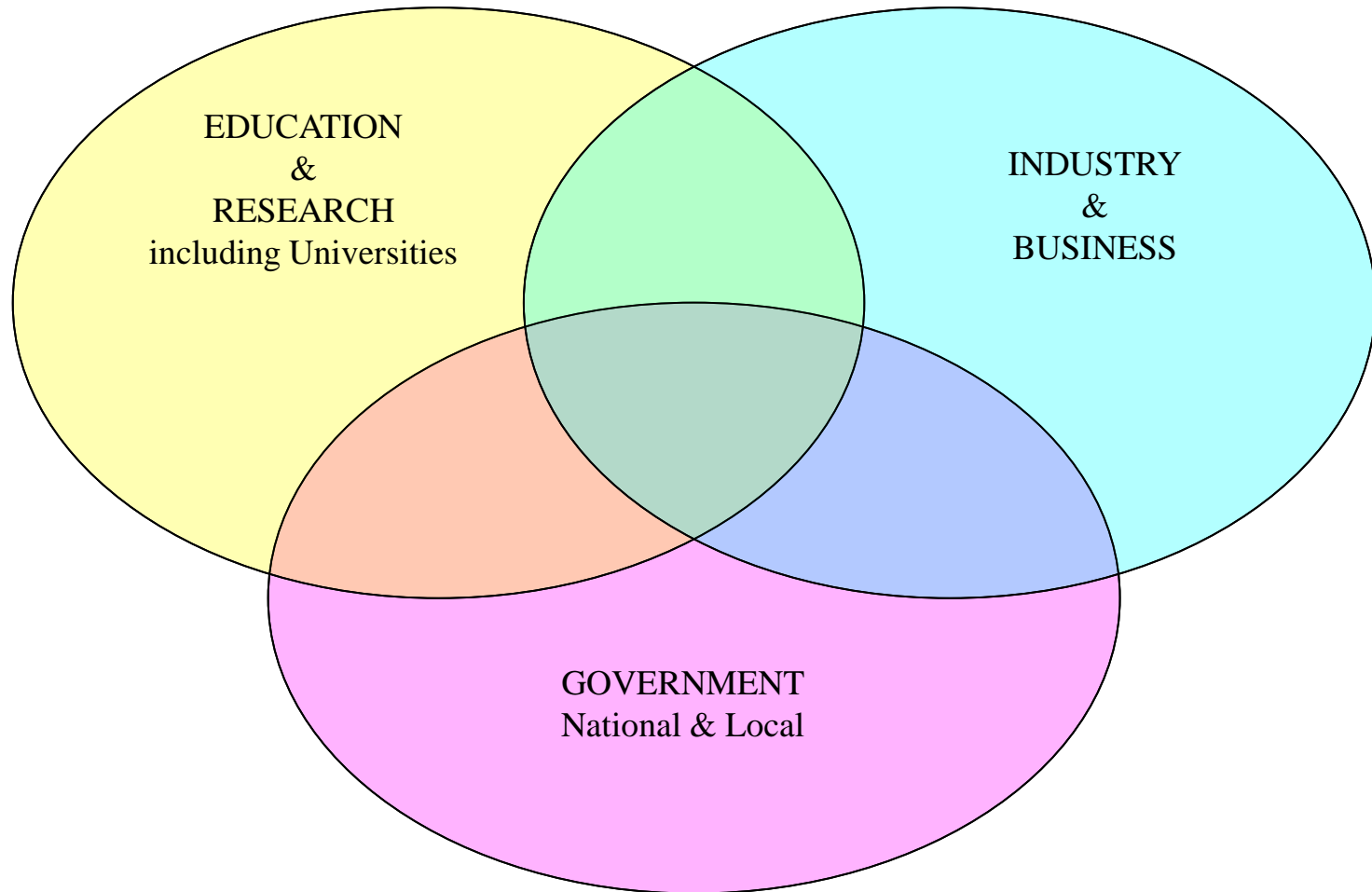
**ORACLE**  
 VOCALEIS  
 ENSIGMA  
 JAVA  
 POLYHEDRA  
**MOTOROLA**  
 Lexicus Division  
 RONTIER  
 AltoCom

RNT Limited  
 RNT Limited

# Converging Interests and Influences

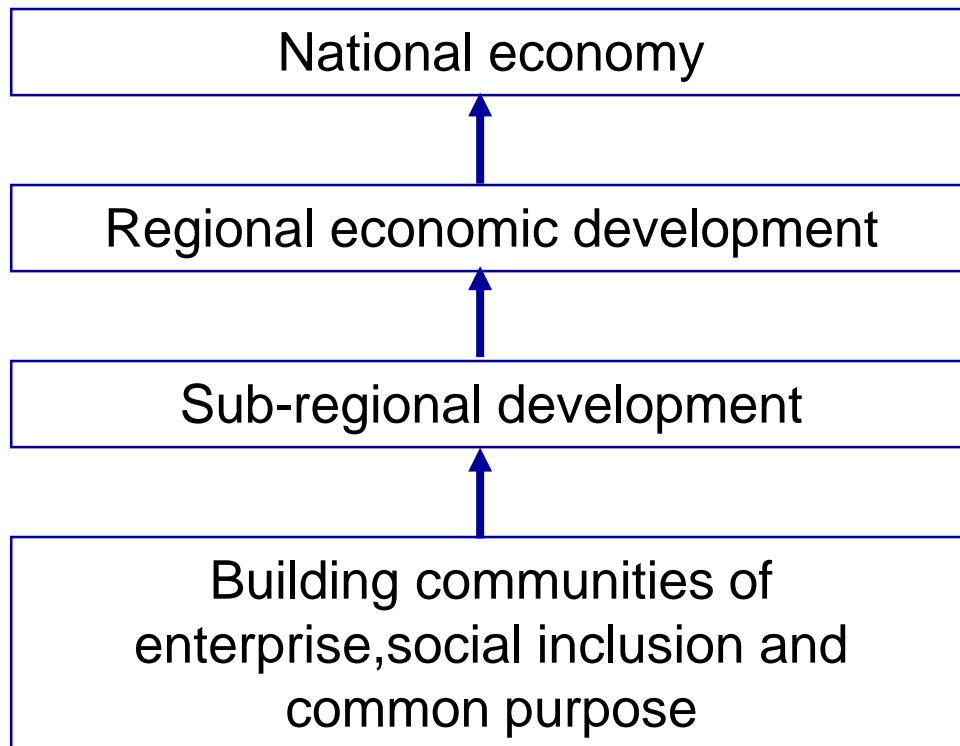
Innovating in the Overlap and Adding Value – working together  
– Essential Partnerships

---



# Building an Enterprise Society. Networking and Communities – Manageable Units – working where real PEOPLE can influence things – ANYWHERE in the World

---



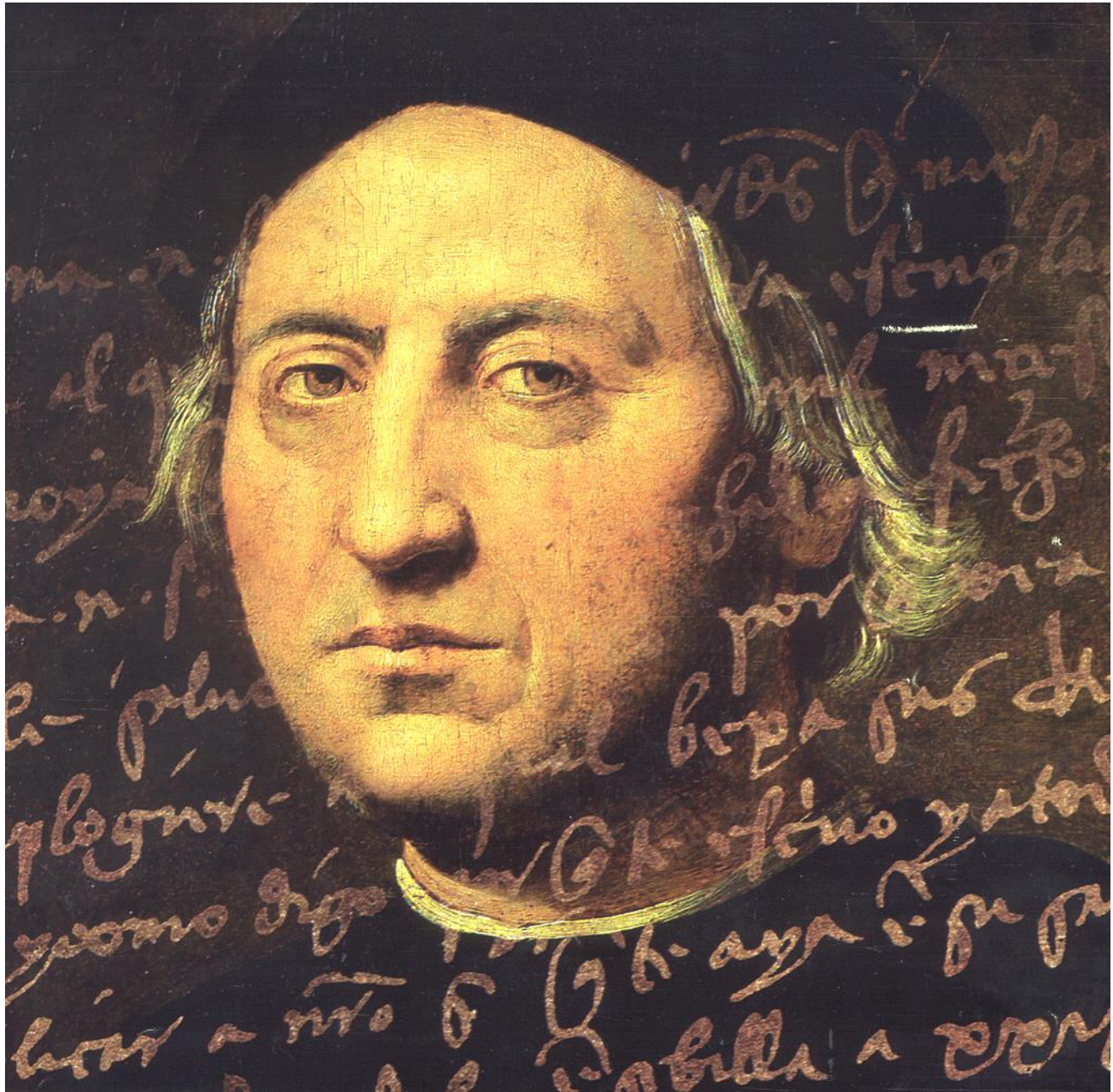


# Do HEROES change World ? – what are they good at? .....could it be....

---

- Exploring.....
- Discovering....
- Risking.....
- Believing.....
- Creating.....
- Changing.....
- Enabling.....
- Visualising.....







Slide 43





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**7** 1431-1433  
The last voyage, to Africa's Swahili coast, with a side trip to Mecca, marked the end of China's golden age of exploration and of Zheng He's life. He presumably died en route home and was buried at sea.

**6** 1421-1422  
Zheng He's fleet continued the emperor's version of shuttle diplomacy, returning ambassadors to their native countries after stays of several years, while bringing other foreign dignitaries back to China.

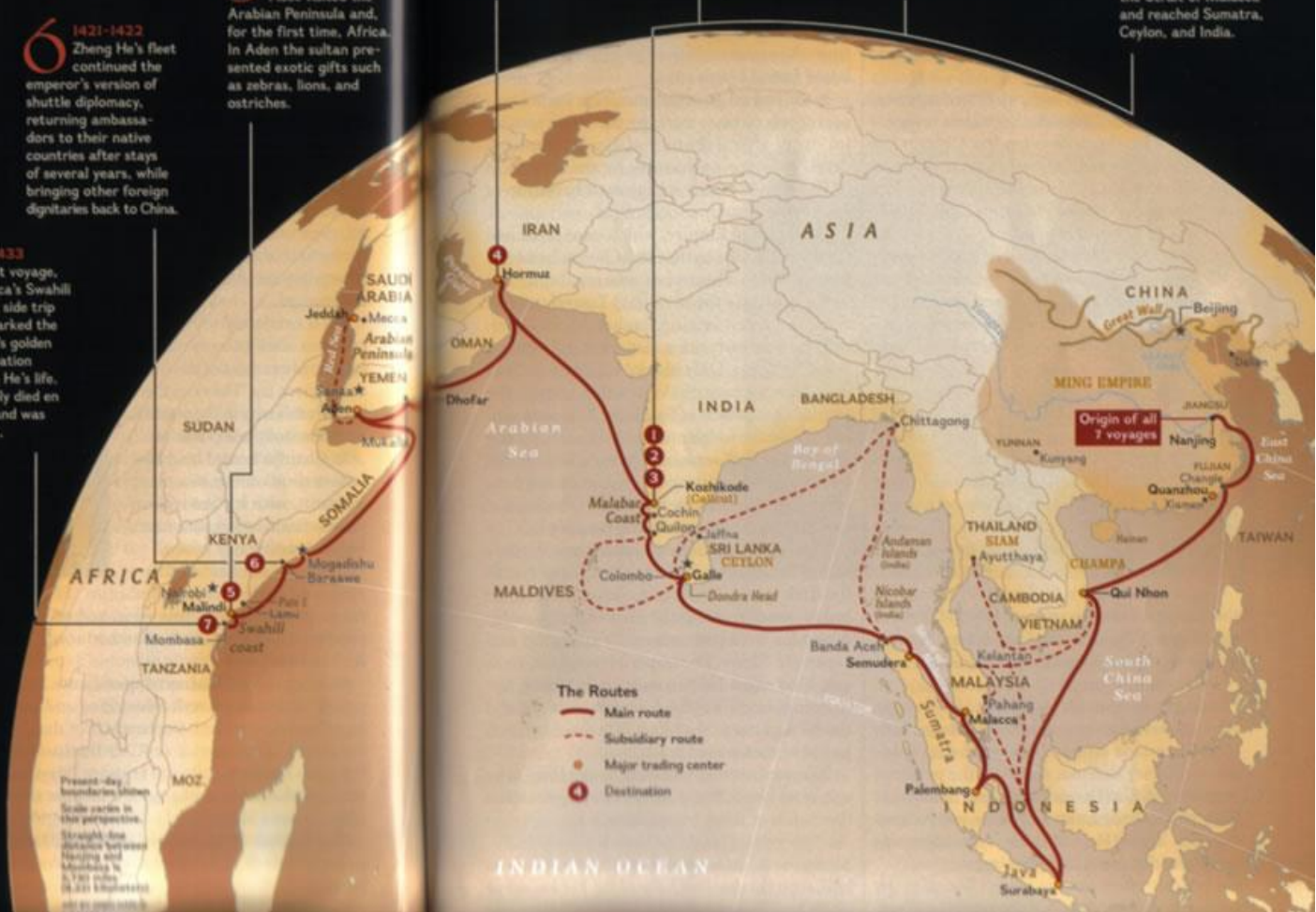
**5** 1417-1419  
Zheng's Treasure Fleet visited the Arabian Peninsula and, for the first time, Africa. In Aden the sultan presented exotic gifts such as zebras, lions, and ostriches.

**4** 1413-1415  
In this voyage's wake, the first to travel beyond India and cross the Arabian Sea, an estimated 10 states sent tribute and envoys to China, underscoring the Ming emperor's influence overseas.

**3** 1409-1411  
Although notable for the imperial fleet's only major foreign land battle, the voyage was also marked by Muslim Zheng's offering of gifts to a Buddhist temple, one of many examples of his ecumenism.

**2** 1407-1409  
The fleet returned foreign ambassadors from Sumatra, India, and elsewhere who had traveled to China on the first voyage. The expeditions firmly established the Ming dynasty's Indian Ocean trade links.

**1** 1405-1407  
317 ships, 27,870 men  
In July the fleet left Nanjing with silks, porcelain, and spices for trade. This well-armed floating city defeated pirates in the Strait of Malacca and reached Sumatra, Ceylon, and India.



Present-day boundaries shown  
Scale varies in this perspective.  
Straight-line distance between Nanjing and Malindi is 5,700 miles (9,150 kilometers).



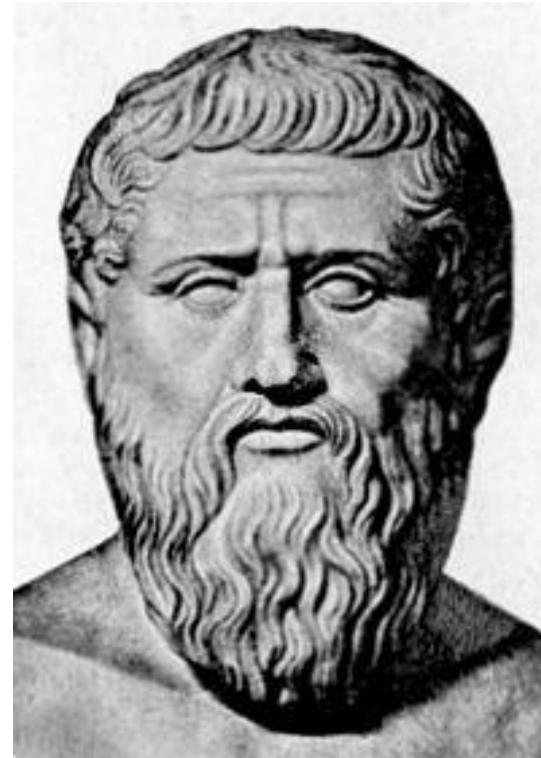
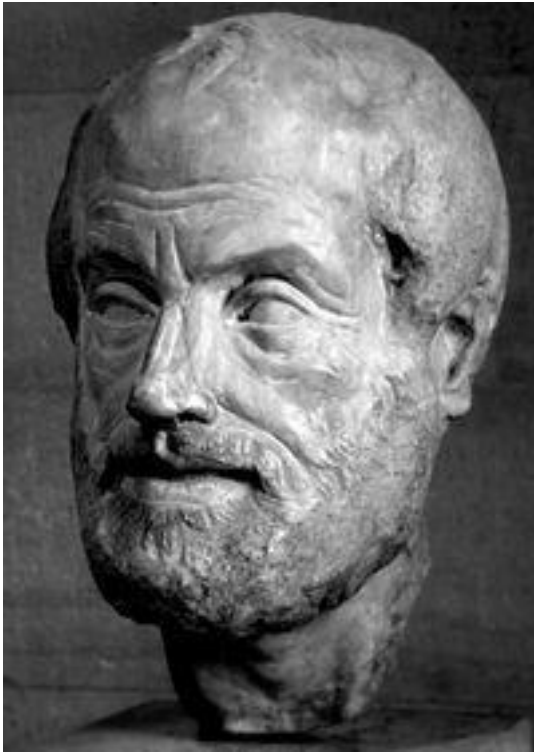
# Pericles – “First Citizen of Athens” – Soldier, Thinker, Leader, “Culture, Beauty, Glory”

---



# Aristotle – Plato – “Before their time – Thinkers, Philosophers, Leaders”

---



# And about the same time in China....The subject of the first of the 2008 Reith Lectures on BBC Radio....

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# Confucius on *Wealth*

---

“*Virtue* is the root; *Wealth* is the consequence”

Confucius, 500 BC

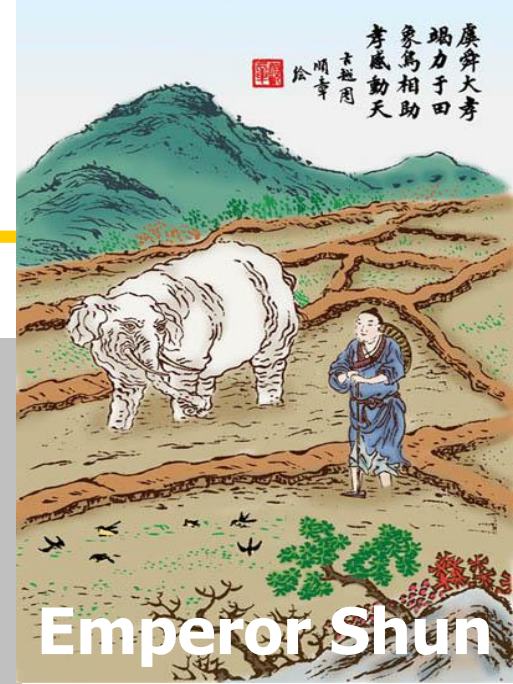




# *The Book of History*



“允执厥中”  
“To Impartially  
Adhere to the  
Middle Way”



# Why MINDSET matters – what's an Entrepreneur ?

---



**“You look at things  
and ask - why?  
  
but I dream of  
things that never  
were and ask -  
  
why not?”**

*George Bernard Shaw*



# Joseph Schumpeter (1911)

---

**“Entrepreneurs blow gales of creative destruction.”**

Role of the entrepreneur in transforming economies by developing:

- *New products*
- *New methods of production*
- *New ways of organizing*
- *Untapped raw materials*
- *Enhanced competitive performance*



# The drivers for change....Socio-Political....Entrepreneurial Influence ??.... (Prof Shai Vyakarnam – Cambridge 2008)



Berlin Wall  
Hasselhof



China



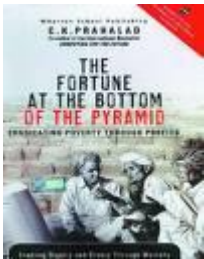
India



Migrations  
Within and into  
Europe



Single  
Economic system



Completely new markets



Is there a shift in  
economic centre of  
gravity?

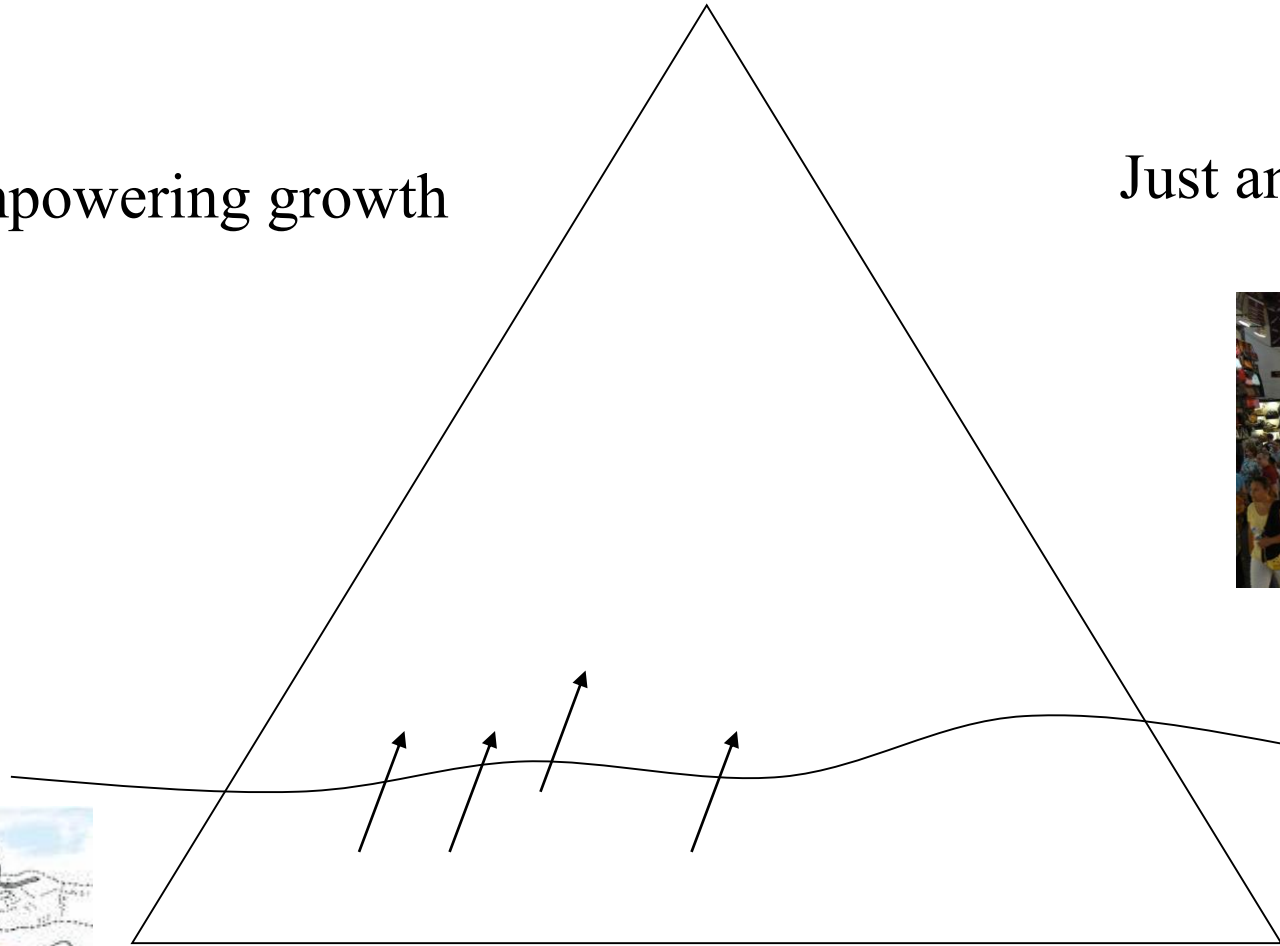


# The pyramid – Humans in a free market view?

(Vyakarnam 2008)

Empowering growth

Just another market



# More examples....Entrepreneurship and People / Society

---



Making a united Europe a reality



Transforming lives of the poor



Creating breakthrough technology enterprises

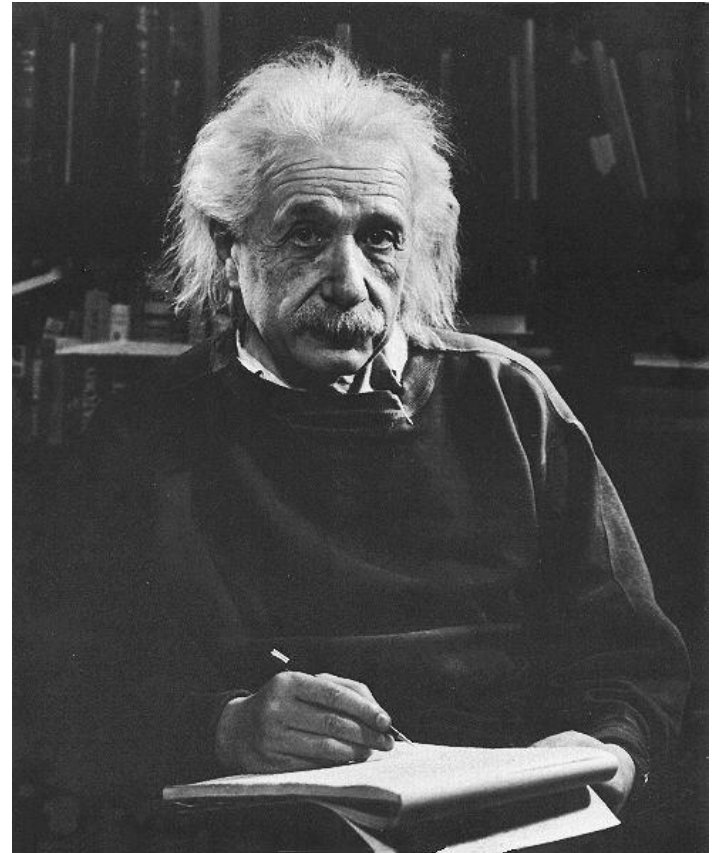


Democratising knowledge –  
“Education Without Borders”





# A “Brainpower Hero”



# Einstein on IMAGINATION....

---

**“Imagination** is more important than knowledge. Knowledge is limited. Imagination encircles the world”

*Albert Einstein 1879 - 1955*



# Imagination can be suppressed by circumstances and vested interests....AHA! A picture taken 65 years ago....what has changed ?....





*Robots are with us.*  
**Imagine** with me ....  
**'Cyberman'**

Is it just  
IMAGINATION ?

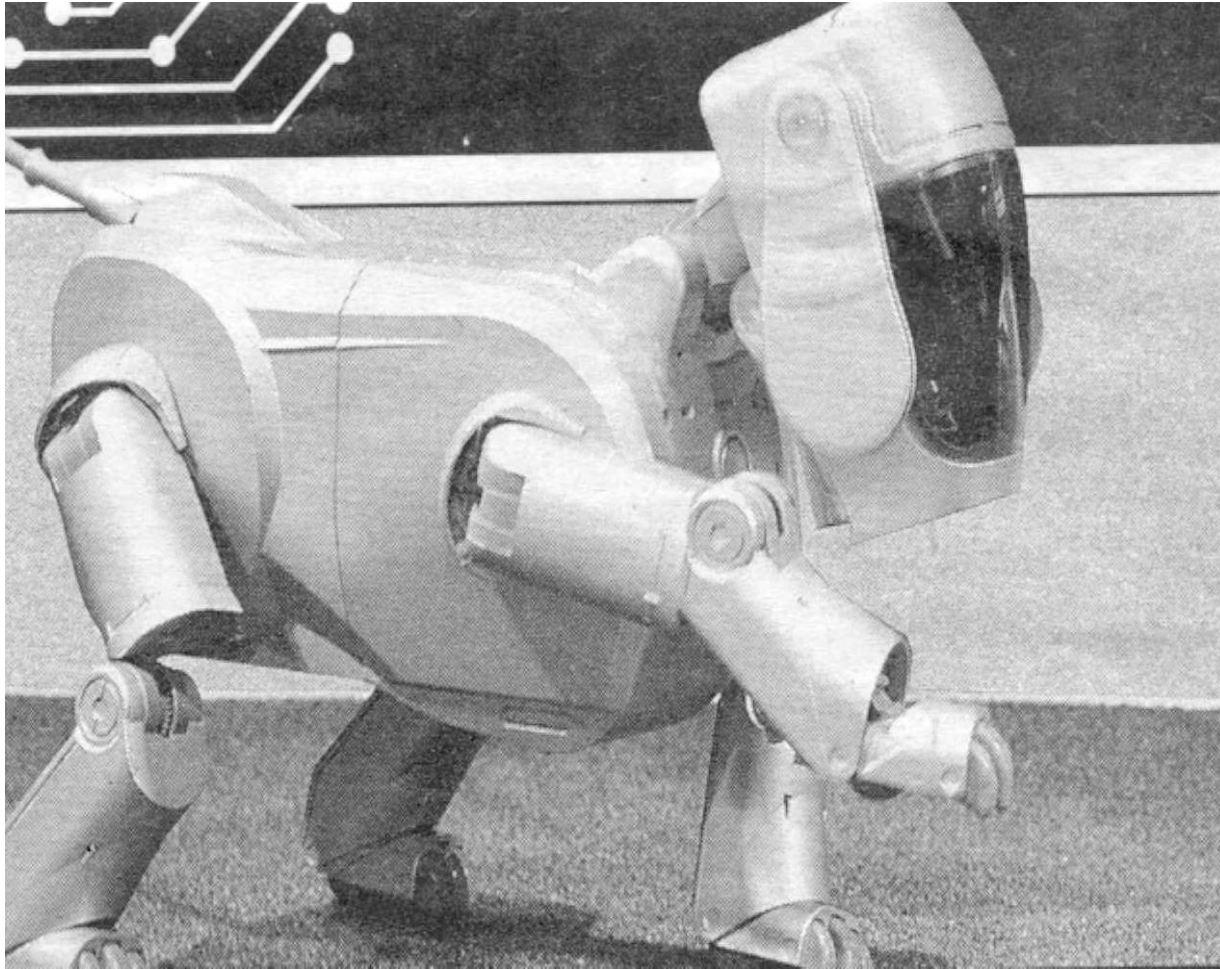
Maybe he looks  
familiar ?



# **‘Cyberdog’**

***He really barks and bites, but doesn't “poo” –  
Hitachi makes him.***

---



# Can robots go too far?.....

---



“



Anyone who has never made a mistake  
has never tried anything new. //

*Albert Einstein (1879–1955)*

”



# Is there RISK involved?...Oh dear....

---





# If at first you don't succeed....try again....but learn from the mistakes! Can RISK be eliminated ?



*Discovery comes from within...through  
seeking.....*

---

- “The Source of *Real Discovery* consists not in seeking new Landscapes
- But in having NEW EYES”

*Marcel Proust*



# Who ever heard of Albert-Szent-Gyorgyi ?

---

He, a Nobel Laureate said.....

“***Creativity*** is no more than looking at the same thing as everyone else and ***thinking*** something different.”



# So lets think about - IMAGINATION, CREATIVITY MINDSET ENTERPRISE and ENTREPRENEURSHIP

---



# Exploring Creativity and Innovation

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- CREATIVITY – The ability to develop new ideas and discover new ways of looking at problems and opportunities
- INNOVATION – The ability to apply creative solutions to problems and opportunities to enhance or enrich peoples lives
- Creativity is THINKING – Innovation is DOING – discuss please !
- Consider the relationship between Creativity, Innovation and Vision.....



# Are we nurturing “Prepared Minds”?

---

“Where observation is concerned,

Chance favours **only** the prepared mind”

*Louis Pasteur - 1854*



# Ours is “The Knowledge Economy” and we can be imaginative – but what about WISDOM ?

---

- “True Wisdom includes the humility to acknowledge what we don’t know” (*Rabindranath Tagore*)
- “Liberate Minds” (*Hu Jintao*)
- “The Ability to discern what is true or right and make sound judgements” (*Websters Dictionary*)
- “The World has an abundance of knowledge – and a serious lack of Wisdom” (*Archbishop John Sentimu*)
- And then there is ***Trust***...or is there?....



# Thinking of Creativity and Innovation - Would you invest in this team ?

---





# What did you decide? Creativity and Innovation are “inside” not “outside” qualities. Presentational styles have changed !

---

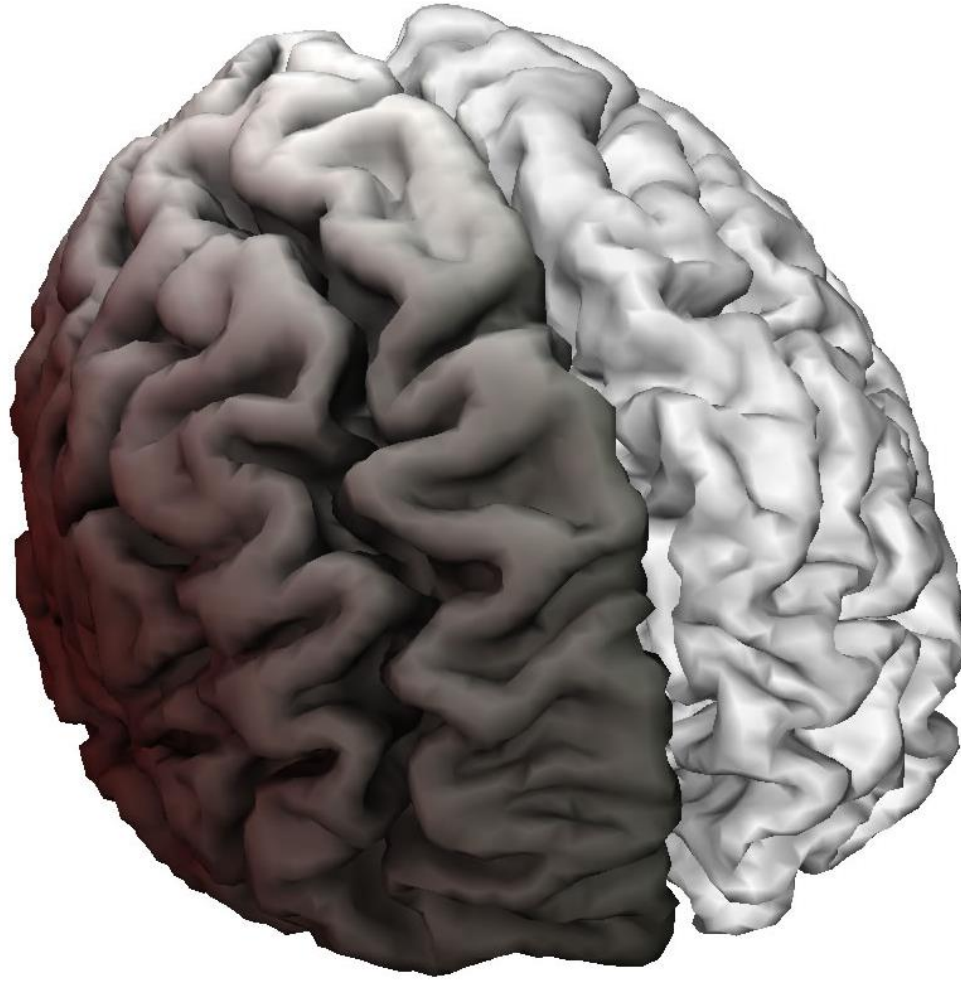


Microsoft Corporation, 1978



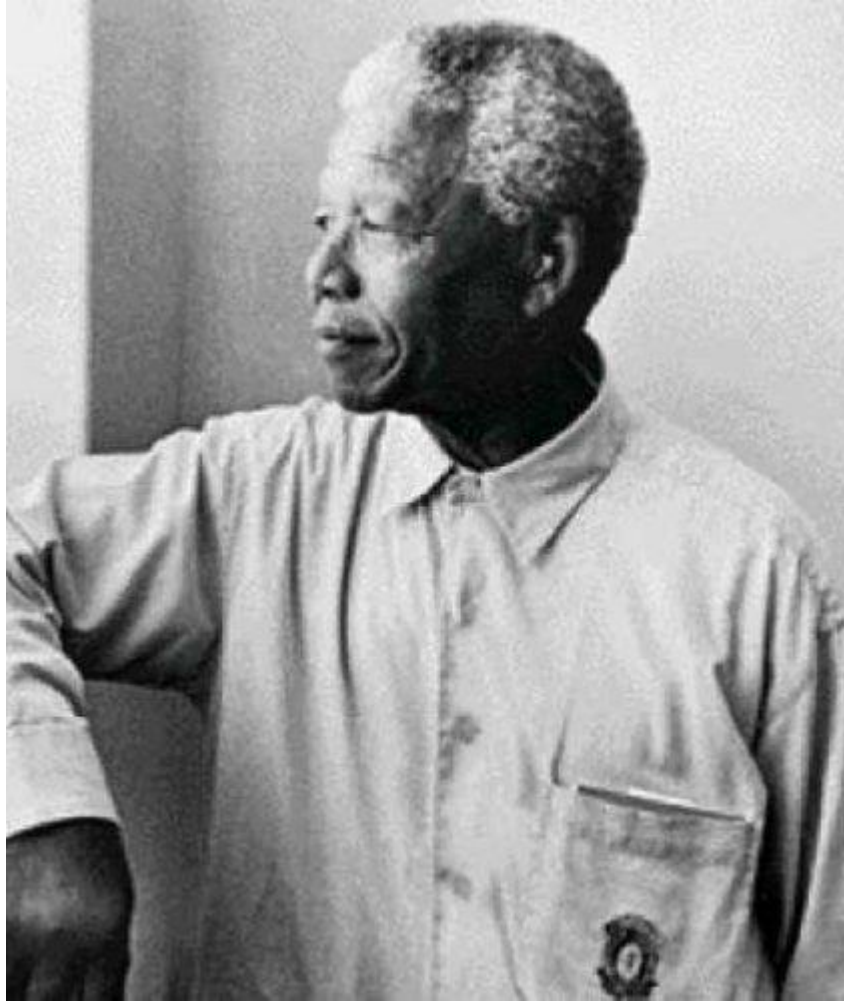
**Back to Heroes – they all had one of these –  
but so do *WE!* – *everyone of us!***

---



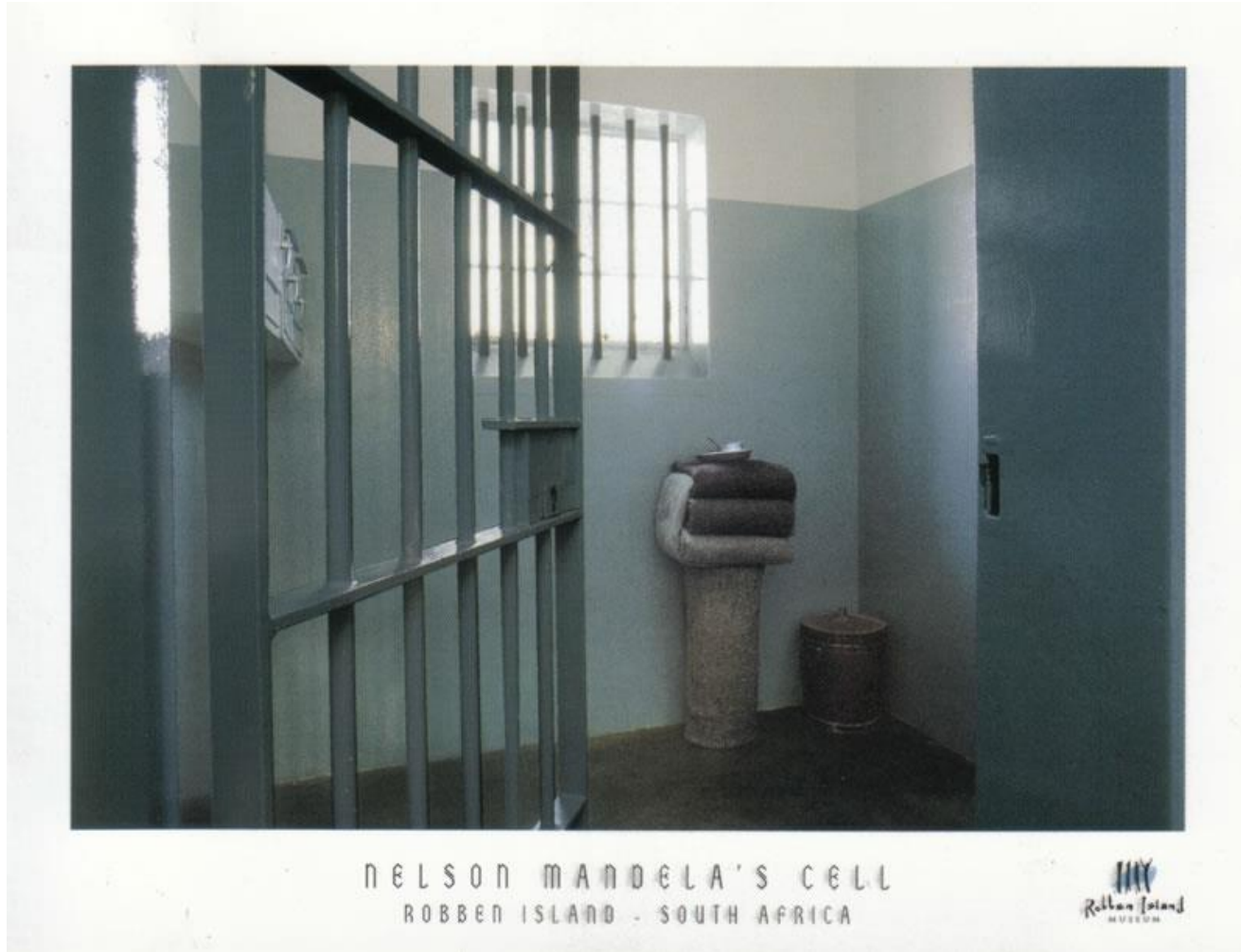
**Another REAL Hero....he changed the WORLD !  
From a prison cell – keeping brain and heart alive –  
for 27 years !**

---



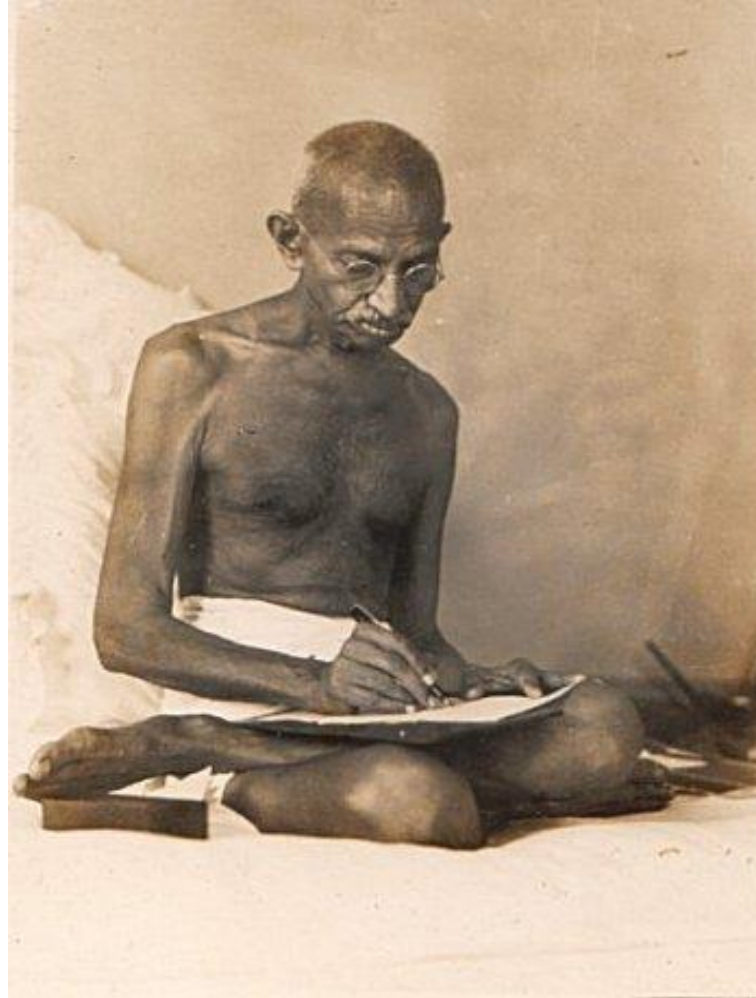
# A Hero's Home for 18 Years....Could WE have survived it ? – Could our leaders of today ?

---



# Heroes can show Humility

---



# How BIG is the World ?

---

“The World is big enough for everyone’s  
needs – but it is too small for the GREED of  
one man !”

*Mahatma Gandhi*



**Recognise this “Hero as a boy” ? He has a close association with this place....**

---



# A bright young man who was at Christ's College....

---





# Came to do Theology....not for long....

---



# Quite a Family Man

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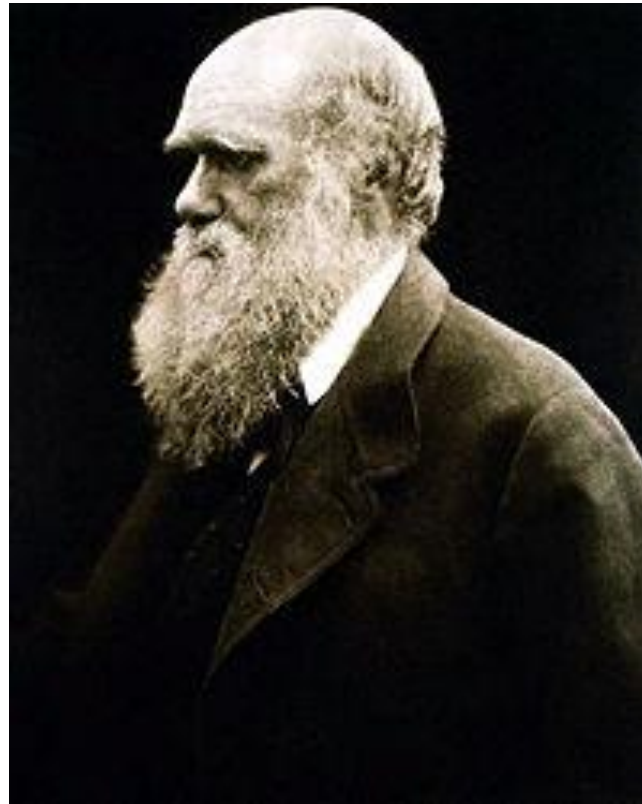
# The Voyage of The Beagle

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# And – *“The Origin of Species”*

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# Familiar Face....

---



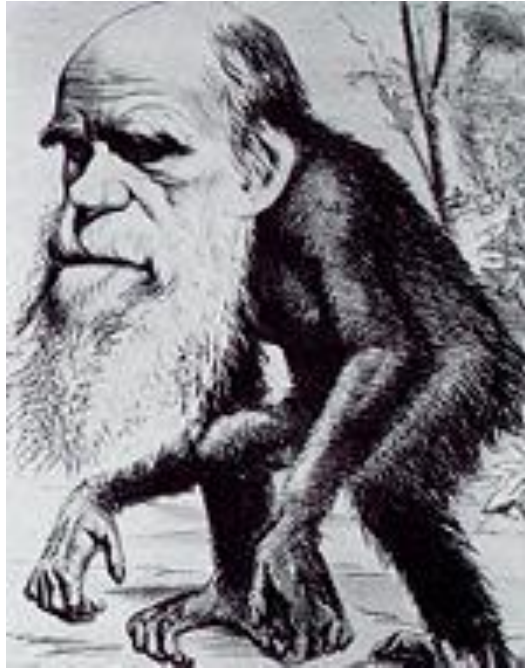
# Often Caricatured....

---



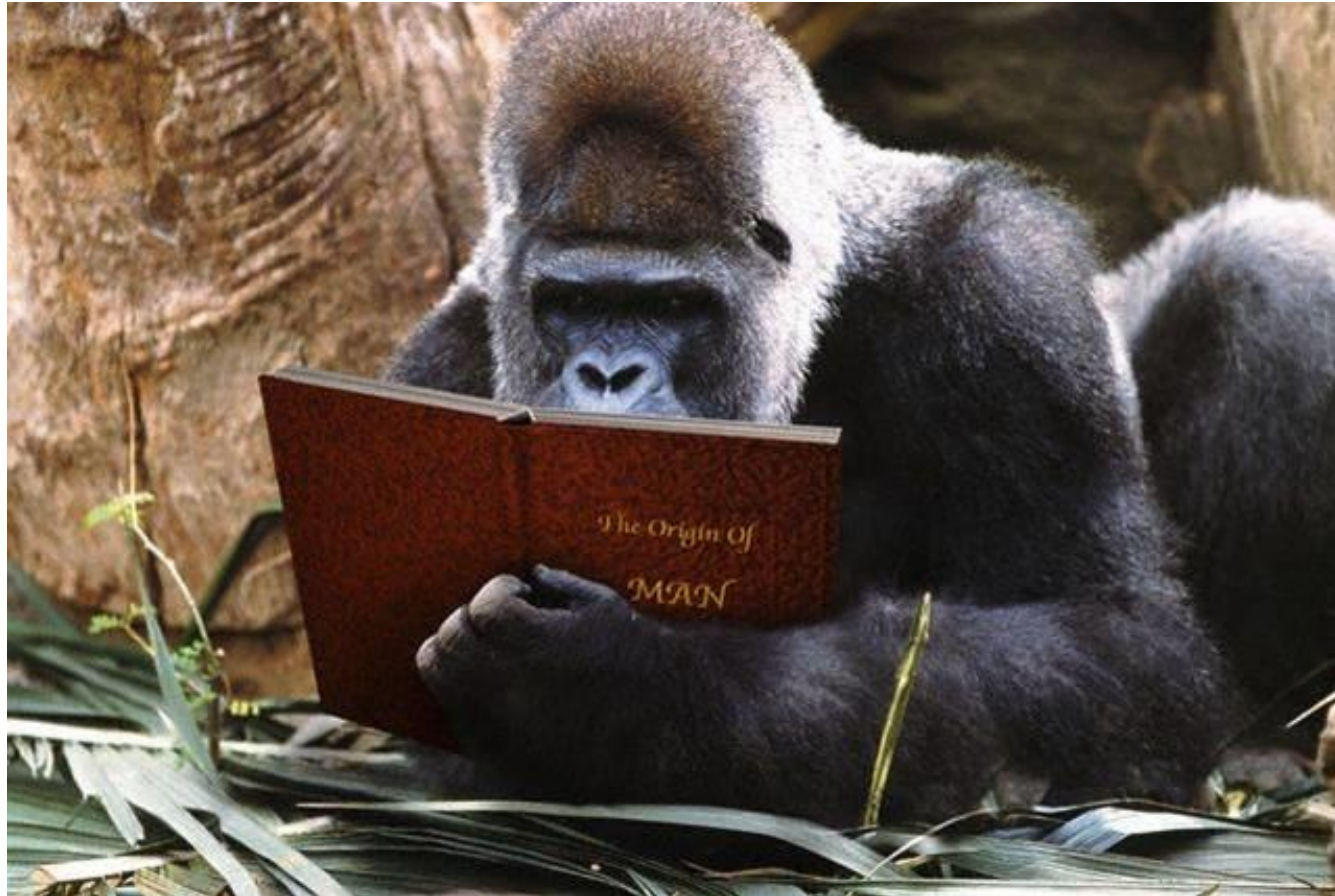
# Heroes are usually *Controversial*....

---



# Our Origins....Another Point of View!

---





# China Wakes ! A Recent Chinese Hero

---



Deng Xiaoping shaking hands with General Secretary Jiang Zemin in 1992. Flanking them are Wan Li, then head of the National People's Congress, and Deng's daughter, Deng Rong. [Photo by Xinhua.]

“To get rich is  
GLORIOUS”

Deng Xiaoping 1982



# When CHINA Wakes.....

---

**“Let China sleep....for when she wakes,  
she will SHAKE the World!”**

*Napoleon Bonaparte*



# Some of China's Achievements

---

- Compound growth of GDP at 9% since 1995, sixth in the world
- One of top 10 trading nations
- The most popular FDI destination
- The largest mobile phone market
- The second largest PC market
- The third largest advertising market



# The Phenomenon of Ancient China – Creativity and Inventiveness – some of the Inventions – just to remind us all

---

- The first lamps
- Magnetic Compass
- The Camera
- Gunpowder
- Paper for writing
- Printing
- Iron and Steel Smelting
- Copper and Bronze ware
- Oil Drilling and Production
- Coal Mining
- Pottery and Porcelain
- Wine making and tea and tea culture
- Early Astronomy
- Sericulture – gave us Silk
- Seismography
- Traditional Medicine and Anaesthetics
- Acupuncture
- Vaccination against Smallpox
- The Hot Air Balloon
- The Soushi Calendar
- Decimal and Binary Mathematics



# The tiger in front

A survey of India and China | March 5th 2005

The  
Economist



Source: *The Economist* 2005



# “To get RICH is GLORIOUS”

---

**“Opening Markets – Opening Borders – Opening Up –  
discarding Protection”**

**When China took a lead....and a few risks.**

*A most propitious moment in time*

*SO – Let’s look more closely at CHINA and A bit closer at INDIA.... But  
First....There are other Continents.....*



INSIDE THIS ISSUE: TECHNOLOGY QUARTERLY

# The Economist

MARCH 12TH-18TH 2005

www.economist.com

The press turns on Blair

BAGEHOT, PAGE 40

America and its immigrants

PAGES 27-29

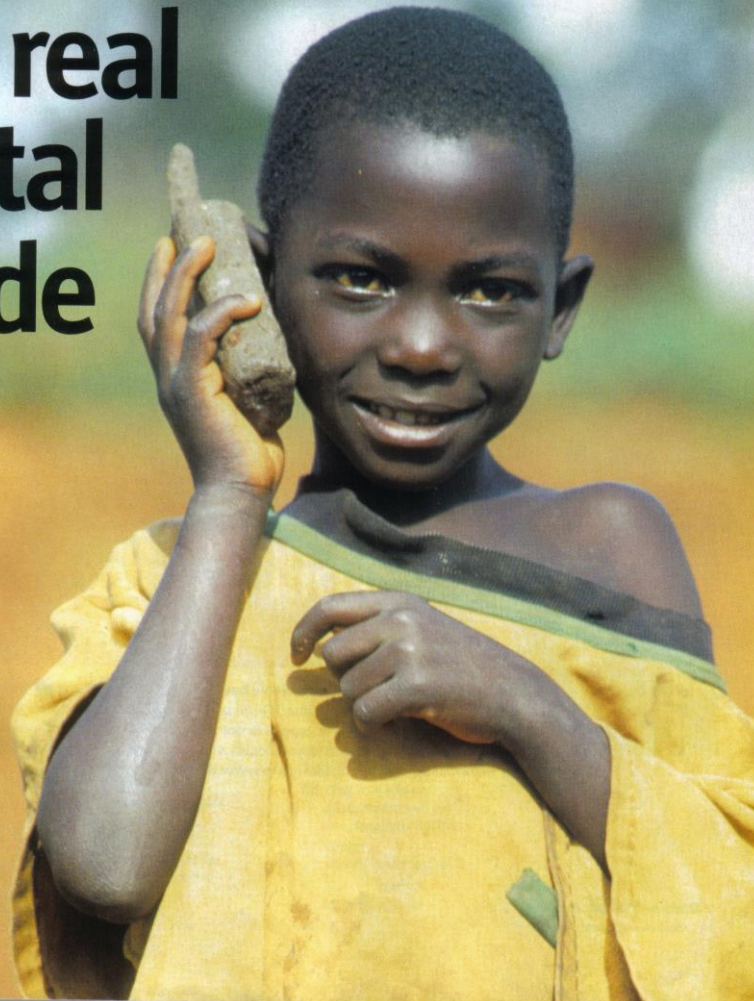
Dealing with Iran

PAGE 10

Can the new boss revive Sony?

PAGES 10 AND 83-85

## The real digital divide





# Brasil





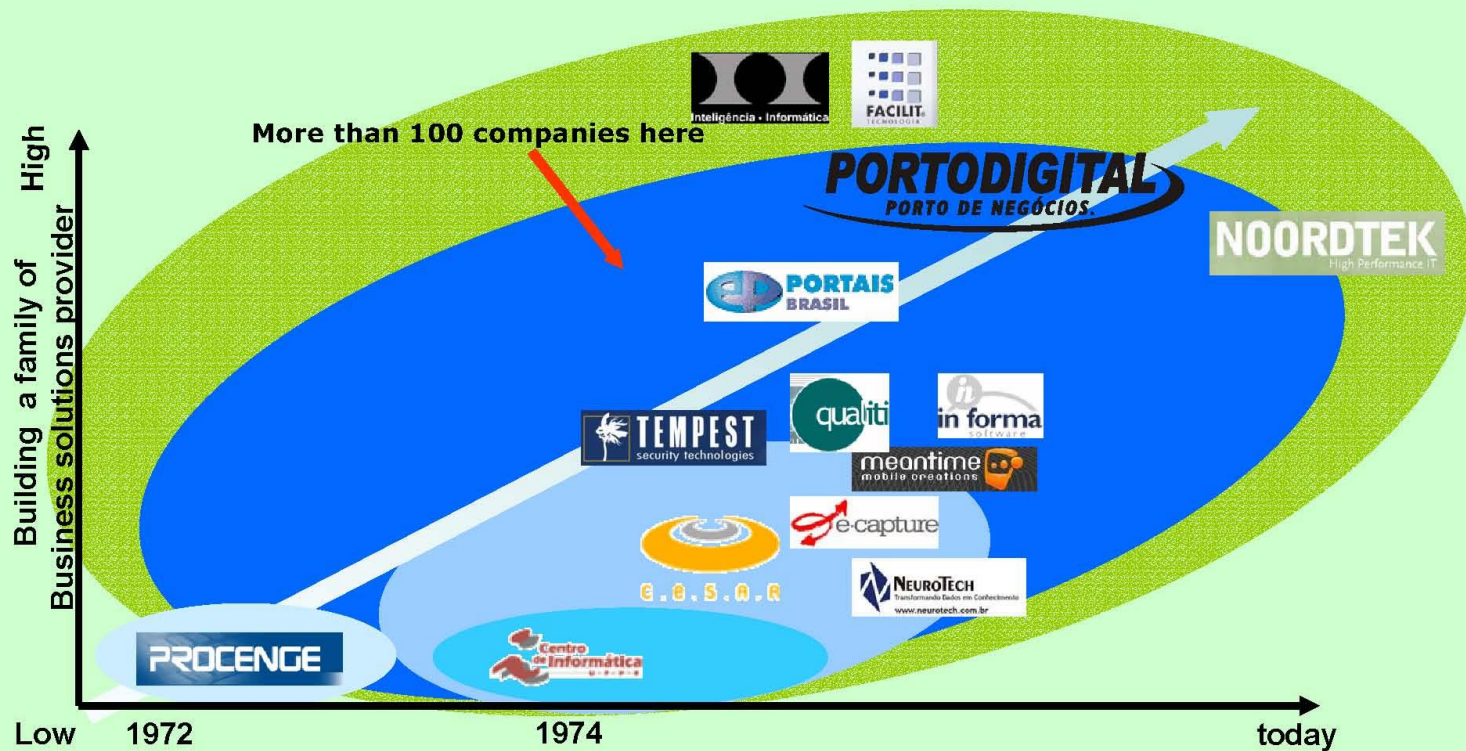


Closer than  
you  
Believe!!!

We are in  
the  
RightShore  
for your  
peace!!!



# Local System Innovation: The Success History





# Some Economic Indicators – A reminder....

	<b>GDP % Change</b>	<b>Ind. Prod. %</b>	<b>Trade Balance US \$ Bn</b>	<b>Foreign Reserves US \$ Bn</b>
<b>China</b>	+ 9.5	+ 8.9	+60	1.8 Trillion And growing!
<b>India</b>	+ 8.6	+ 8.0	- 25	150
<b>Britain</b>	+ 2.9	+ 0.1	- 49	
<b>Euro Area</b>	+ 2.1	+ 1.0	+ 86	
<b>USA</b>	+ 3.9	+ 3.5	- 679	

- Can the trend continue? China's \$s growing at 200billions a quarter!
- What if China pulls out of US \$ - moving its reserves?
- Do the Trade Balance differences matter? – India and China?



# China - Summary

---

- The Chinese economy is expected to be bigger than the UK economy this year and the German economy in 5 years.
- The Chinese economy shows a movement from the agricultural sector to the “industrial-manufacturing” sector.
- The main thrust of Chinese companies in entering new markets/expanding market shares is expected to be in the “manufacturing space”
  - Key areas are expected to be
    - Consumer goods manufacturing,
    - Textiles and apparels manufacturing,
    - Household electronics and appliances,
    - Oil & Gas,
    - Steel
    - Automotive and auto-parts



# China's Achievements

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- Compound growth of GDP at 9% since 1995, sixth in the world
- One of top 10 trading nations
- The most popular FDI destination
- The largest mobile phone market
- The second largest PC market
- The third largest advertising market



# Growth Potentials

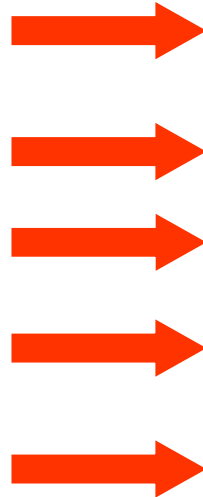
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- China's semiconductor market is growing 18-20% year on year
- Laptop PCs enjoyed the fastest growth of 39% in 2002 and will continue at similar speed in 2003
- Mobile phone users have been increasing at 5 mln per month
- The number of Internet users is expected to double over the next 5 years



# The Market for Everything

- Urban population 450 mln, 160 cities over 1mln
- Emerging of middle class
- Privatisation of housing
- Increasing attention to well-beings
- Availability of Internet



- Enormous market for FMCG
- lifestyle products
- Home improvement
- Healthcare and fitness products
- E-learning services

**Western type of consumerism is mainly driven by 15-25 years age group (70 mln)**





# The World's Factory

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## China already produces:

- 60% of world's toys
- 55% of world's shoes
- 60% of world's air-conditioners
- 60% of world's microwave ovens

Now more cars, laptops, ICs, mobile phones...



# UK Capabilities fit well with China's priorities areas

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- Telecoms, information technology
- Transportation, power generation
- Chemicals and petrochemicals
- Bio-tech
- Agriculture/ food processing

**Potential opportunities also with:**

Consumer goods, environment and pollution control, healthcare, education and training, and financial services



# What Can China Offer?

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- 750 mln people live in the countryside
- Returning overseas students and local MBAs
- Science and Engineering students on the rise
- Increasing usage of ISO accredited process
- Easy access to other Asian markets



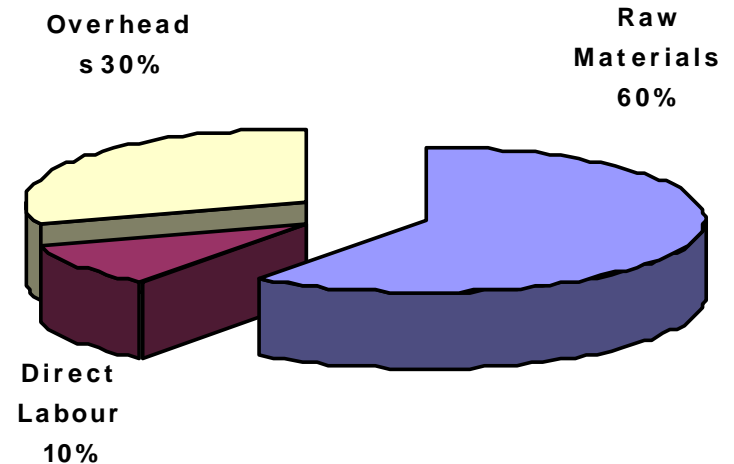
- unlimited supply of cheap labour
- Local management talent more available
- R&D localisation become feasible
- Quality of outsourced manufacturing
- Convenient re-export base



# Cost savings can be significant

- Labour cost 10% of the UK's, however direct labour saving has limited contribution to total costs, usually up to 9 %
- The real savings come from materials, typically 10 to 60% (Arup & Partners' findings)

## Typical cost structure of UK manufacturers



Source: Institute for manufacturing, Cambridge University



# But cost is not the *only* driver

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In many cases, it is the increasing efficiency of supply chain that has driven foreign companies to manufacture in China.

- Telecom
- Automotive
- FMCG



# China steps out – M&A – and Overseas Investments – *momentum building....*

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- Chinese companies clinched 43 overseas merger and acquisition deals by mid-October 2004, compared with 39 in 2003. The total value of the deals has reached US\$1.93 billion, only US\$270 million less than the whole year of 2003. More happening all the time
- Lenovo (formerly Legend) acquires the PC business of IBM. Creates world's third-largest PC business with approximately US\$12 billion annual revenue for 2003.
- CNOOC bids \$13B for Unocal. Almost beat Chevron-Texaco !
- TCL International Holdings, one of China's largest television and handset makers, formed joint ventures earlier this year with Thomson SA and Alcatel.
- Shenzhen-based 999 Group, one of the country's largest pharmaceutical enterprises, bought a 51 percent stake in Japan's East Asia Pharmacy last year and is seeking to acquire another Japanese drug-making business.
- 2007-2008 – "Sovereign Wealth Funds" – China investing in Western businesses, notably banks
- China invests very significantly in Africa



# Success factors for Working with China – Advice to prospective Western Partners....

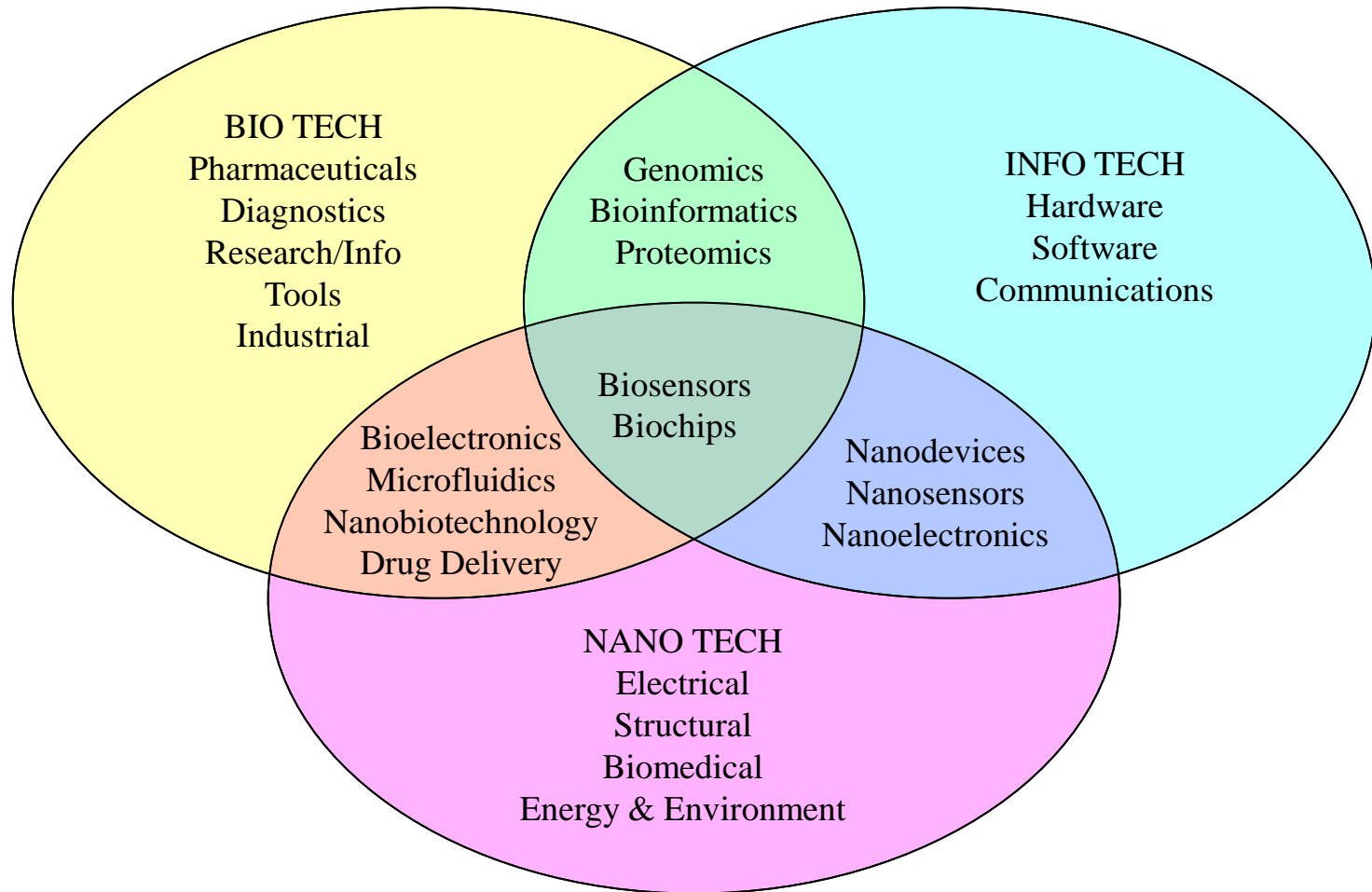
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- Leading-edge technologies available in China – and Chinese companies looking for top technology too
- Quality & customer service – the edge
- Local supply chain – needs to be close
- Local partners/employees – the **KEY**
- Cultural Understanding Can you “talk”
- Regional focus – China is a BIG country
- expertise
- Consensus among UK employees – be honest and clear!
- Commitment from the top management
- Long-term perspective + acceptable return on **investment** – **Patience**



# Three Converging Revolutions

Three Pervasive Technology Platforms – And they are converging in Asia too !





# Overview of the Asian Biotechnology Industry

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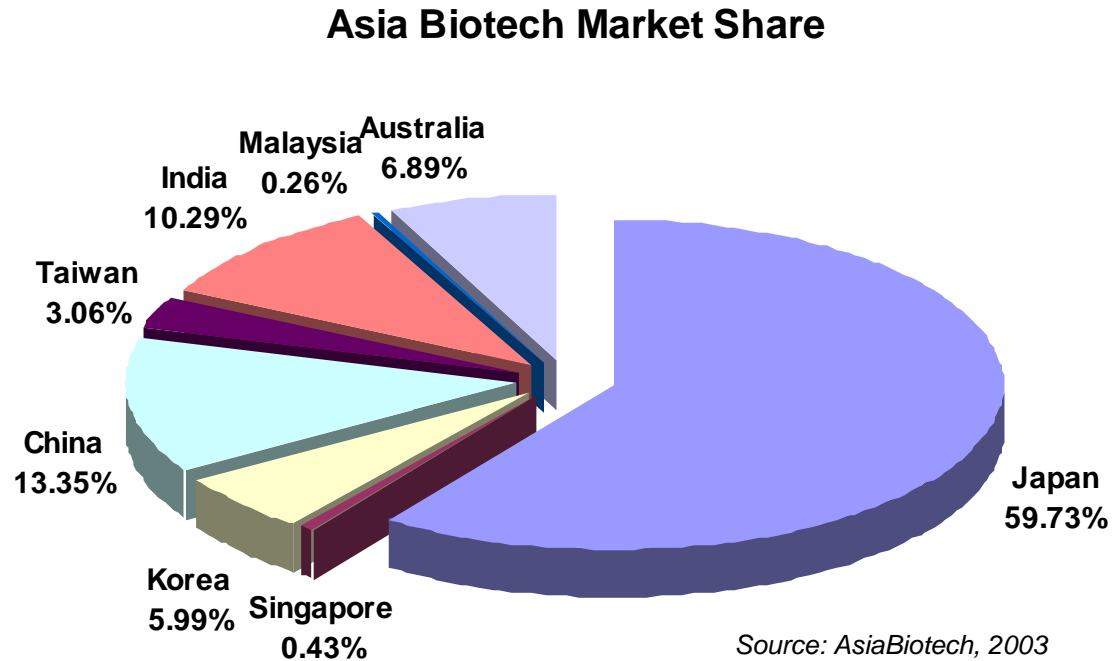
- Asia - Japan, China, Korea, Singapore, Taiwan, Malaysia, India and Australia
- Grown from humble beginnings 10 years ago to reach \$19bn in 2001
- Rates at 10%-\$40% expected in the foreseeable future
- Generally spearheaded by their respective Governments
- Regarded as key to economic prosperity
- Firms are typically small - look to US and EU for additional investment, new technology and commercial expertise

*Source: Asia Marketing and Management, 2003*



# Focus and Markets

- Biotech in Asia - origins in producing new crops and food products - feeding the massive populations
- Emerging is in new drugs to cure prevalent diseases in Asia eg respiratory, infectious diseases
- Rapidly ageing populations of Asia have spurred new developments in biotechnology
- China today has 130 million people age 60 or older
- Likewise 45% of the population is aged between 15-25 - demands of the *nouveau riche*



# China and Biotechnology

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歲次 2004 甲申



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## Biotechnology in China

Dr Elizabeth Hill

China Business Solutions Ltd



# Key Geographical Areas



# Potential of China - Healthcare

China Healthcare has more than

- 320,000 healthcare institutions
- 75,000 hospitals

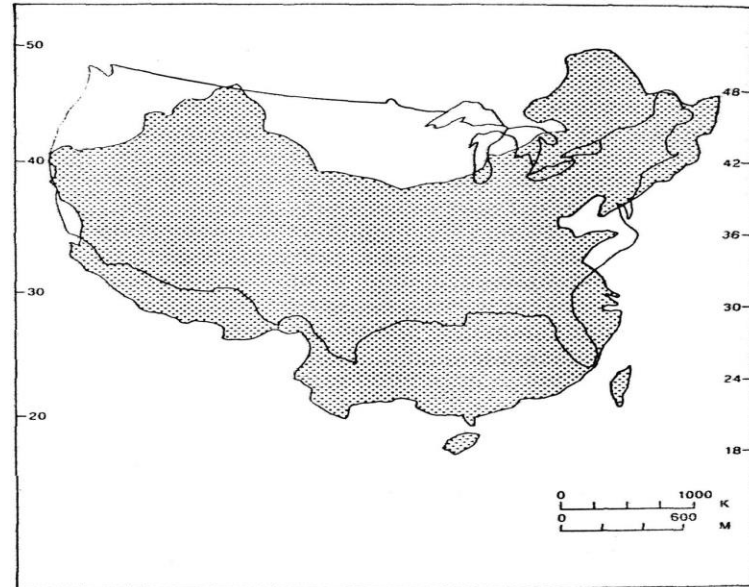
Over 20 biotech parks covering

- **Shanghai**
- **Beijing**
- **Guangzhou**
- **Shenzhen**
- Chengdu
- Wuhan

Further examples Biotech/Pharma  
Production facilities development in

- Pudong, Shanghai; Hangzhou, Zhejiang Province

China is one of the world's largest  
supplier of raw materials to pharma

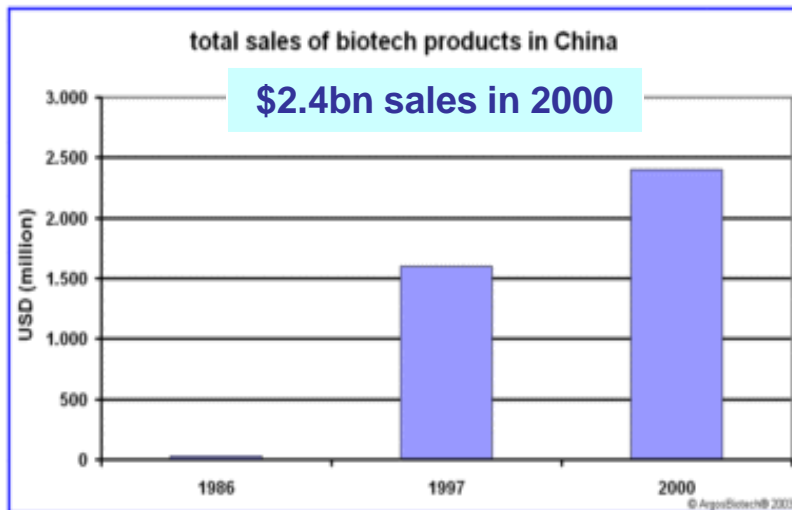


- Land area comparable to US
- Huge population as consumers
- Major economic giant
- Major internal market

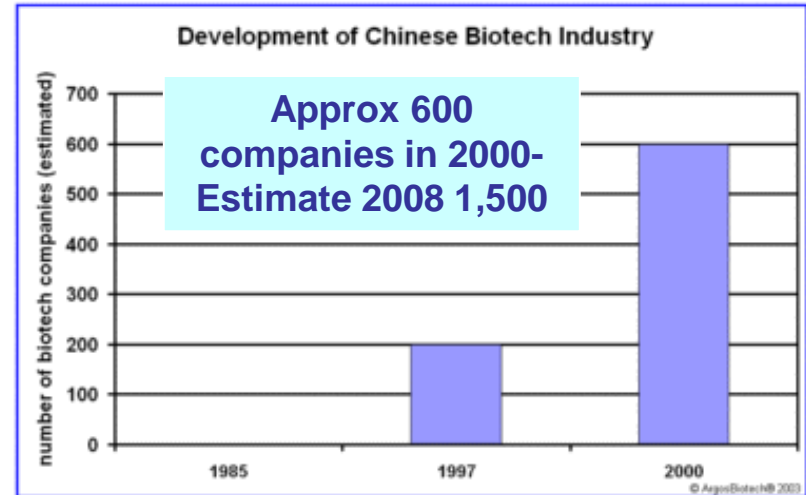


# Biotechnology Market in China

- Biotech in China started in 1984
- Initially concentrated on agribio - food security
- Medical biotech has developed gradually



Source: ArgosBiotech, 2003



- In 2002, China's biotech market was \$2.4bn
- Predicted 2008 - \$10bn
- Participation in the Human Genome (HGP) & International Rice Genome Sequencing Project (IRGSP)
- Now a major biotech player in Asia



# And in Pharmaceuticals - China -Seventh Largest Pharmaceutical Market 2005 – now Fifth

Top 10	1996	2000	2005	2010
1	US	US	US	US
2	Japan	Japan	Japan	Japan
3	Germany	Germany	Germany	Germany
4	France	France	France	France
5	Italy	UK	UK	China
6	Brazil	Italy	Italy	UK
7	UK	China	China	Italy
8	Spain	Brazil	Brazil	Canada
9	Korea	Canada	Canada	Spain
10	Canada	Spain	Spain	Brazil
11	China			



# We are not overlooking **India** – we know it has special expertise....and special problems

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# India – Summary – (Prepared 2006)

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- The Indian economy is expected to be large enough to be a part of the G6 group in 5-7years.
- The Indian economy shows a significant movement from the agricultural sector to the “services” sector.
- The initial thrust of India companies in entering new markets/expanding market shares is expected to be in the “services space” though this will be balanced by significant growth in traditional manufacturing as well
  - Key areas are expected to be
    - Software and IT outsourcing,
    - Business process outsourcing,
    - Pharmaceuticals,
    - Textiles and apparels manufacturing,
    - Automotive parts and ancillaries manufacturing
- There is a perceived and urgent need to India to embrace and employ Quality Control and Good Manufacturing Practices



- GDP \$ 548 Billion
- GDP growth 8.2 %
- PCI \$ 454 per annum
- Middle income families 52 Million families  
(\$ 1887 to \$ 20,969)
- Projected growth in MIF 9 % CARG

SERVICES

51.2 %

Agriculture & Allied

24.8 %

Industry

24 %

# Entrepreneurship–Opportunity or Necessity? The Indian “Black Economy”

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“Of all those working in India.....

97% with jobs are SELF EMPLOYED”

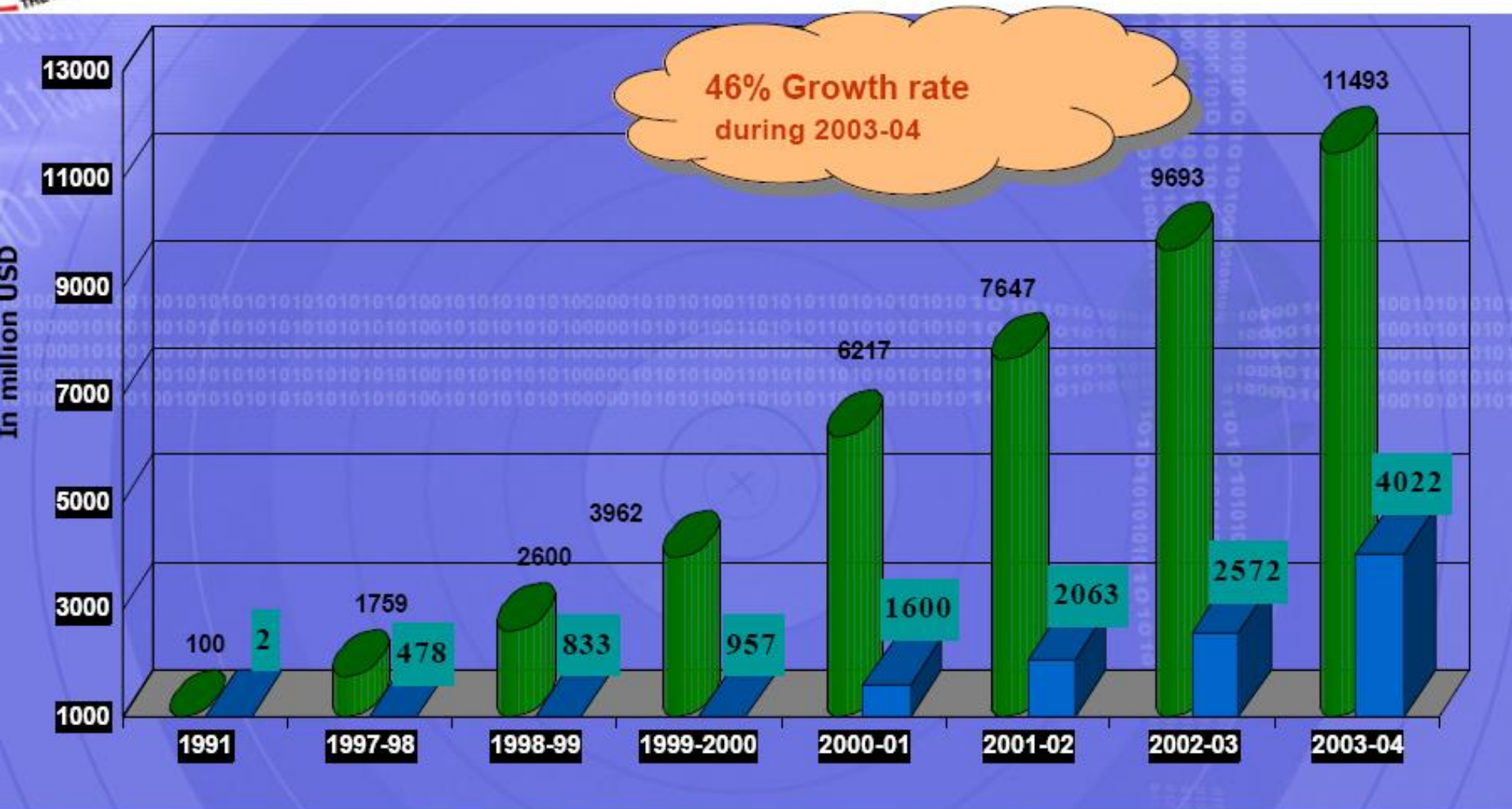
Positive or negative?.....

*Source – UK BBC Today Programme 2007 – Indian Institute of Management*





# Software Exports from India & Karnataka



Bangalore maintains its leadership position



# Bangalore :

## 4<sup>th</sup> largest Technology Cluster in the World (as per UNDP )

### *Integrated Chip Design*

**Texas Instruments**

**Siemens**

**Synopsis**

**Philips**

**Analog Devices**

**National Semiconductors**

### *Communication Software*

**Lucent Technologies**

**Nortel**

**Siemens**

**Motorola**

**Cisco Systems**

**Ericsson**

**Sony**

### *System Software*

**Oracle**

**Novell**

**Sun Microsystems**

**Digital/Compaq**

**Hewlett Packard**

**Network Associates**

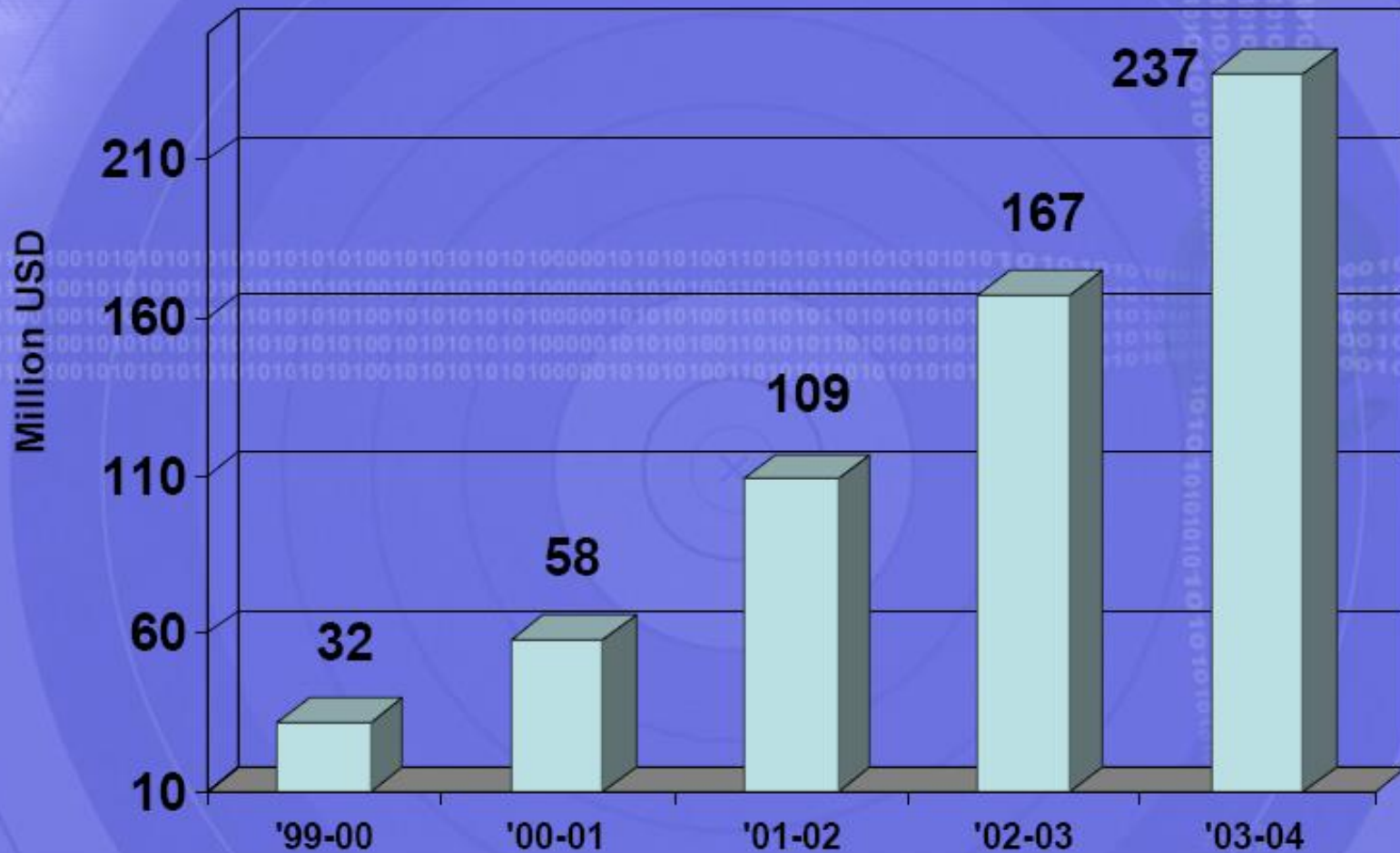
**A Haven for Multinational Companies**

# Major Multi National R & D Centres in Bangalore

- ❖ **Texas Instruments**
- ❖ **Motorola**
- ❖ **Daimler Chrysler**
- ❖ **General Motors**
- ❖ **GE**
- ❖ **SAP**
- ❖ **Astra Zeneca**
- ❖ **Microsoft**
- ❖ **Intel**
- ❖ **Phillips**
- ❖ **Oracle**
- ❖ **AMD**
- ❖ **Telelogic**



# BIOTECH INVESTMENTS IN KARNATAKA 1999 - 2004



# India steps out – M&A

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- Tata Group:
  - Tata Motors group buys & turns around Daewoo truck plant.
  - TISCO buys NatSteel for \$280+M
  - Tata tea buys Tetley.
- Reliance group buys FLAG telecom for USD210M.
- VSNL acquires Tyco's 60,000KM pan-continent submarine fibre optic network for \$130M.
- Ranbaxy Laboratories buys
  - Ohm Laboratories in the US, Rima Pharmaceuticals in Ireland & SP Medicamentos in Brazil.
- Dr Reddy's Laboratories acquires
  - BMS Laboratories Ltd and Meridian Healthcare (UK) Ltd. In the UK
- NIIT acquires
  - Osprey Systems Inc and Clicktolearn in the US.

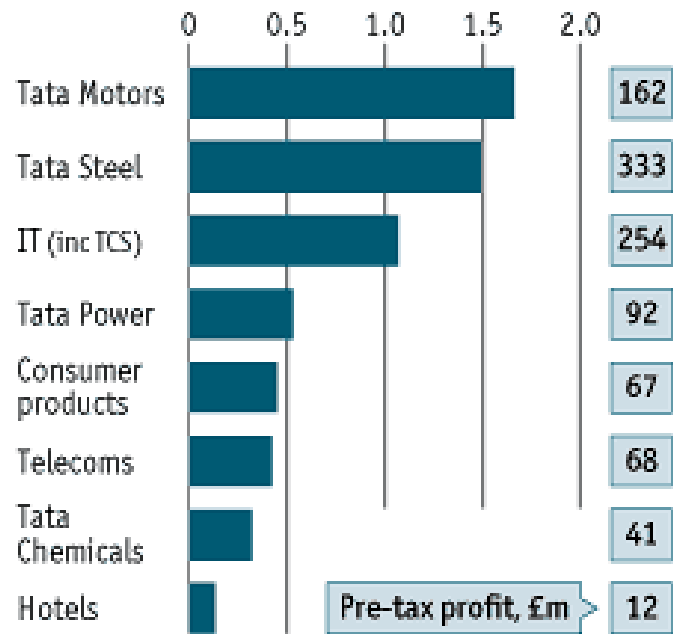




## Tata for now...

Tata group

Revenues, year ending March 2004, £bn



Source: Company reports



# India and China – The Infrastructure Investment Question ....



# And what about Europe ?

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- Enlarged European Union now 500 millions people in 27 Nations – others want to join including Turkey.
- Growth in established West European Economies has slowed.
- Eastern Europe countries growing fast – smaller Nations – Latvia, Estonia, Lithuania, Slovenia have GDP growth % at 12-15%
- Mobility of labour and migration / immigration has accelerated – but problems remain.
- Welfare focus in Western Europe has stifled innovation (in some cases ).
- Some countries very US dependent – NATO presence
- Disagreement on degrees of integration / federalisation (The Euro etc ), but EU Commission has grown stronger.
- Post Soviet break-up leaves Russia Isolated and Nervous – note recent events – Western Europe needs more understanding re Russia/Nato etc.
- The Russian / East Europe Axis may be as great ( ? Greater) threat than terrorism to World Peace. Ethnic / Cultural issues



# And for the Future....

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- Creativity and Innovation will be key if Europe is to maintain a major share of World Trade and Growth
- Longer term planning will be essential in the West
- Western philosophy and political systems may NOT prevail
- “Co-Opetition” and Partnership ( e.g. with China ) more appropriate than competition.
- Will “Democracy” prove more effective than “Dictatorship” ? – or can we stop using meaningless definitions ?
- Will “Easternisation” replace “Westernisation” ?
- The evolving definition of GLOBALISATION will be.....interesting.....DISCUSS !
- CULTURE and CULTURAL UNDERSTANDING may be at least as important as Understanding Economics !
- The only certainty is that we will live through ***uncertainty!***



**“Brainpower and Brain Circulation”- Building Structures to  
develop Knowledge and Skills to turn *Vision into Action* –  
*Education and Business Without Borders***

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# In Pursuit of Excellence !

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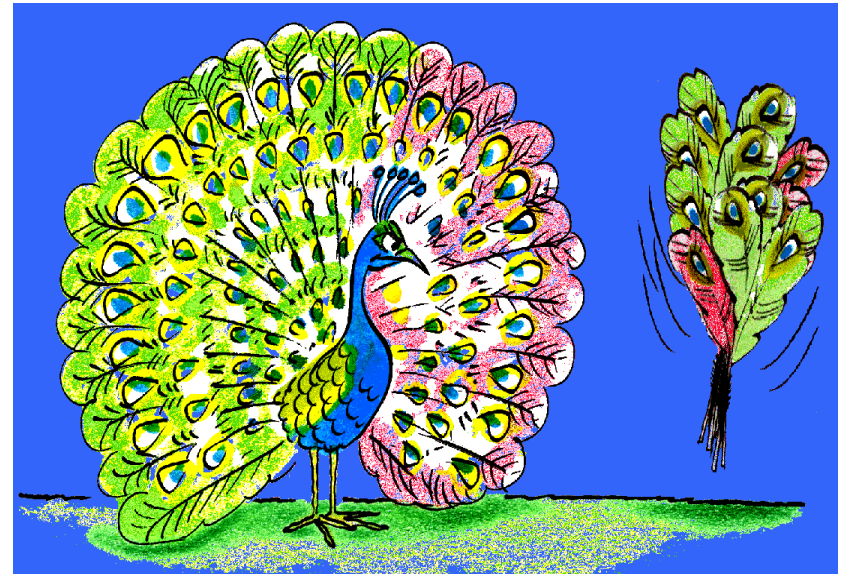
***“Excellence can be achieved, if we:  
Care more than others think is wise,  
Risk more than others think is safe,  
Dream more than others think is practical,  
Expect more than others think is possible.”***

**Deborah Johnson-Ross**



# And....even when we are doing well -

- Beware the “Arrogance of Knowing Best”
  - But Competition is **not** the only way....
  - Knowledge, Skills and Attitude....and applying them....
  - Let’s try Co-Opetition, Complimentation and Partnership – break down barriers - and **CHANGE THE WORLD ! – WORLD WITHOUT BORDERS!**
- Beware Arrogance
  - “Today’s Peacock is tomorrow’s feather duster”



# Partnerships-Never Easy! Impossible without Tolerance and Cultural Understanding



# British Science Coming to China, UK-China High Tech Forum

2005: The year for British Science in China



travelling to China to exchange findings and views with Chinese counterparts, and publicise their activities.

This year a series of conferences, workshops and other activities have been designed, collectively, to showcase the UK's expertise in science and promote scientific collaboration between China and the UK.

#### **The Coordinators**

The campaign is co-ordinated by the Science and Innovation Network of the Foreign and Commonwealth Office in partnership with the British Council. Day-to-day management is in the hands of a FCO-BC team at the British Consulate in Shanghai, with the Embassy in Beijing providing executive steering. At the UK end a committee of key stakeholders drawn from across Whitehall and the UK science base provides further executive support.



# People and Success....at the end of the day....

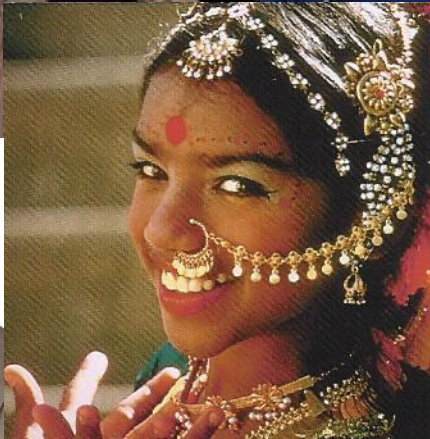
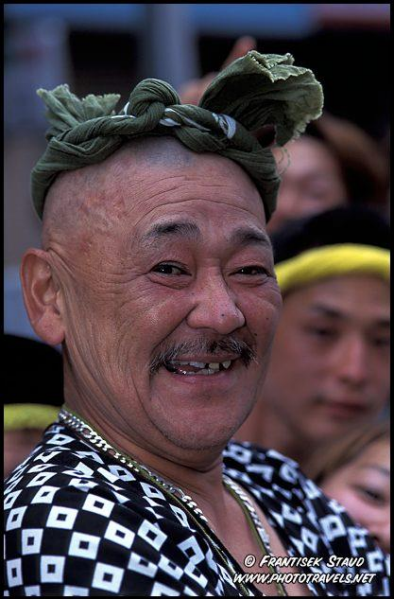
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“We understand that the only competitive advantage the company of the future will have is its people”

*Arie de Geus - “The Living Company”*

*And...what about **complimentary** advantage?*





# Opportunities for THE NEXT GENERATION- Key

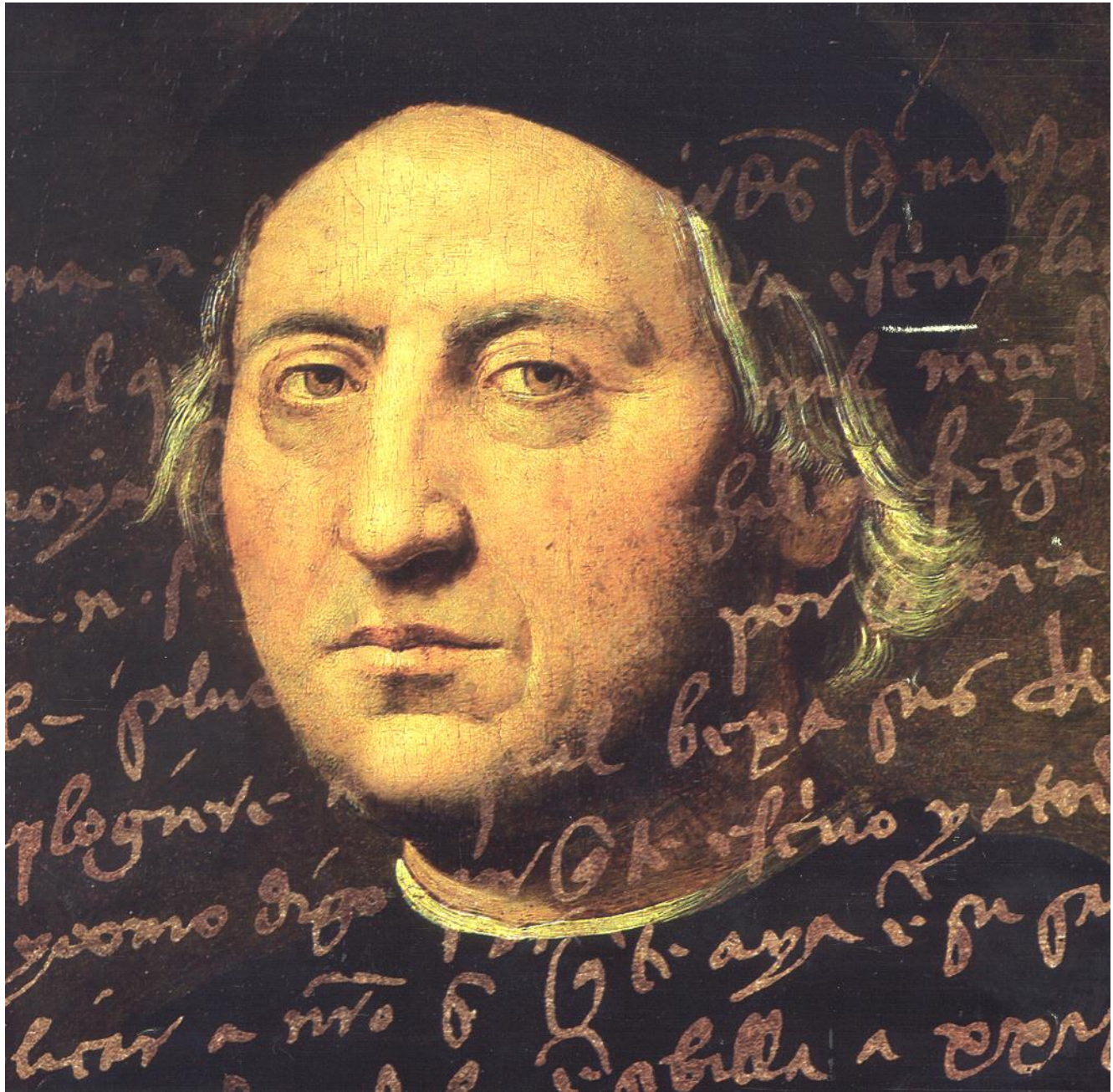
**Words and Actions....**Alan Barrell's closing message to 1500 students in Beijing at the "Education without Borders Conference" – Dec 2007.

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**IMAGINE AND HAVE VISION  
CREATE  
INNOVATE  
INVENT  
"WORLDTHINK" – GLOBAL VIEW  
ACQUIRE KNOWLEDGE  
PLAN AND PRACTICE  
NETWORK! NETWORK!  
INSPIRE OTHERS  
TRUST AND RESPECT-LISTEN WELL  
ENJOY!**

**Breaking Down the barriers – and aiming at "A World Without Borders" will enable the next generation to turn Vision into Action**









Slide 145



# Reflections on Globalisation and the Changing Dynamics of the World Economy

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For more information.....

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