



Ralph Miliband Series on the Future of Global Capitalism

# Full Globalisation as a Positive-Sum Game: Green Demand as an Answer to the Financial Crisis

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**FULL GLOBALISATION  
AS A POSITIVE SUM GAME:  
GREEN DEMAND  
AS AN ANSWER TO THE CRISIS**

Carlota Perez

Cambridge, Tallinn and Sussex universities

Ralph Miliband Lecture Series

**THE FUTURE OF GLOBAL CAPITALISM**

LSE, 18 May 2010



“The future of global capitalism”

A POSITIVE-SUM GAME???

“Green” development and growth  
across the whole globe  
can be as much of a win-win proposition  
between business and society

as the Welfare State  
and the official recognition of the unions  
were in the Post War golden age

BUT NOT IF LEFT  
TO THE UNFETTERED MARKET!!!



*My intention with this lecture:*

TO SHARE SOME REFLECTIONS  
ON THE FEASIBILITY  
OF SUCH A SUSTAINABLE GLOBAL GOLDEN AGE  
BASED ON MY WORK  
ON TECHNOLOGICAL REVOLUTIONS

*The contents:*

- To interpret the current crisis as turning point
- To analyse the question of demand opportunity spaces for innovation
- To look at the Post-war example
- To examine today's global opportunity spaces
- To point to the challenges of recovery

**1**

**The crisis as turning point**

2

The opportunity spaces for innovation

3

The example of mass production

4

The current global opportunity spaces

5

The triple challenge



## THE CURRENT CRISIS IS NOT AN ACCIDENTAL EVENT IN THE FINANCIAL SYSTEM

- It is a historically recurrent phenomenon
- It is endogenous to the market system
- It results from the way  
technological revolutions are assimilated

The collapse marks a structural shift  
in the forces guiding growth and innovation  
from financial to production capital  
and to the return of an active state

If history is a guide...

**A GLOBAL GOLDEN AGE MAY LIE AHEAD**

## BECAUSE IN MARKET ECONOMIES TECHNICAL CHANGE OCCURS BY REVOLUTIONS

Capitalism experiences pendular swings every two or three decades

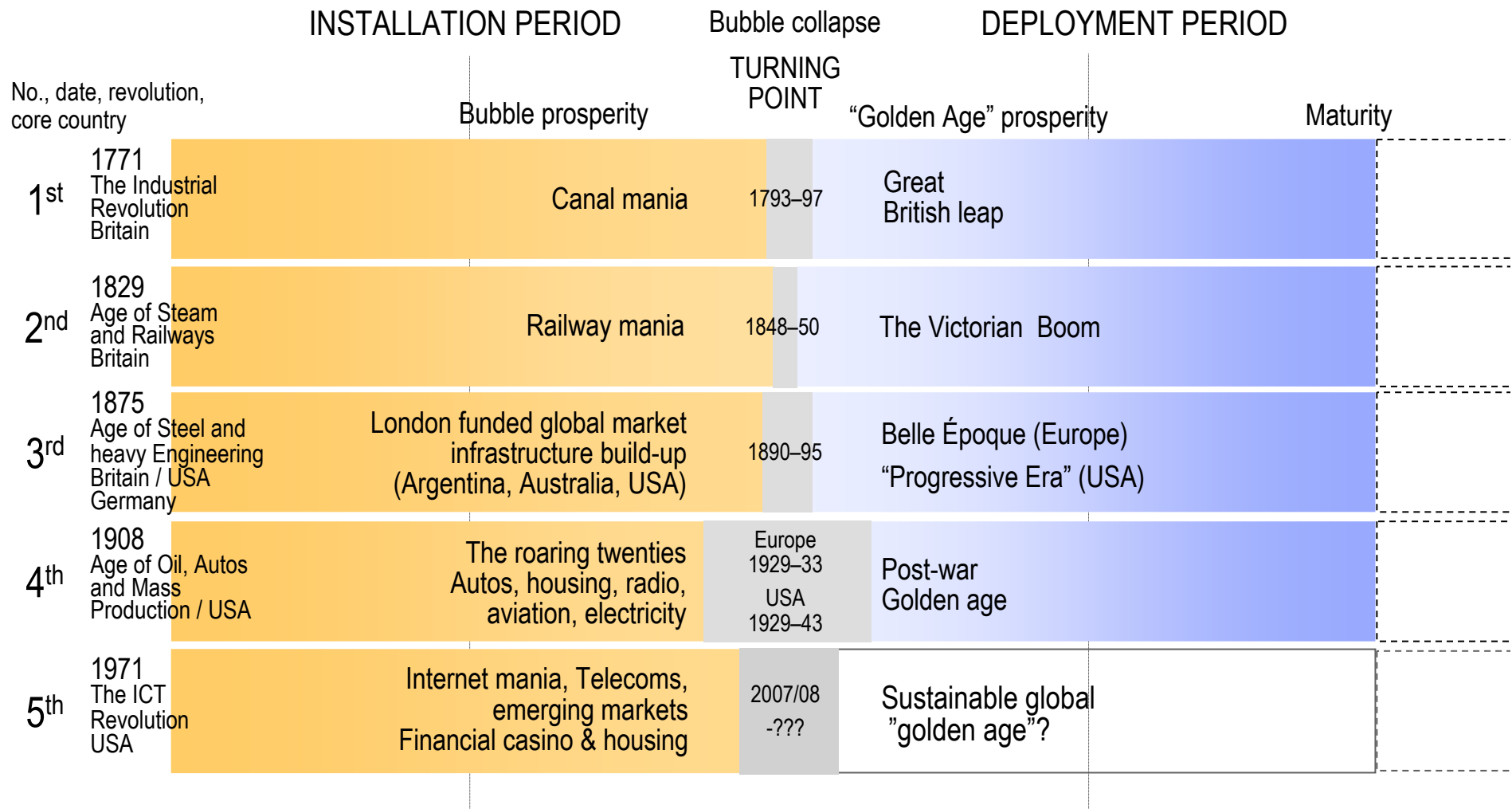
From a “gilded age”  
under the control of finance  
in order to install  
the technological revolution  
and replace or modernise  
the old with the new paradigm

To a “golden age”  
under the control of production  
in order to fully deploy  
the installed potential  
across the economy  
and spread its benefits  
more widely

The major bubble collapse marks the swing of the pendulum

What worked before will not work from now on

# The historical record: bubble prosperities, recessions and golden ages



Golden Ages have been facilitated by enabling regulation and by policies for widening markets and insuring social stability



The structural shift involves  
A CHANGE IN THE DRIVERS OF INNOVATION  
from SUPPLY-PUSH to DEMAND-PULL

INSTALLATION = Supply push

DEPLOYMENT = demand-pull

THE STATE  
in a  
facilitating  
service  
role

FINANCE  
and  
THE NEW  
ENTREPRENEURS  
as drivers  
and innovators

FINANCE  
in a  
facilitating  
service  
role

PRODUCTION  
and  
THE STATE  
as drivers  
and innovators

A vast free market experiment

The full flourishing of the installed potential

During deployment, the conditions for innovation in production  
depend on the effectiveness  
OF INSTITUTIONAL AND POLICY INNOVATION

## We are at the turning point

There are three tasks for governments after the major crash:

**1** intensive therapy  
for finance

DONE... even overdone

**2** redesign of financial  
regulation and architecture

This time global finance needs both  
national redesign and  
a global regulatory “floor”

STILL ON THE DRAWING BOARD

**3** enable structural change  
in the real economy

RARELY BEING CONSIDERED AS SUCH  
But recovery will be very difficult without it

The process can be short or long depending on the social and political forces

The last time around it took over a decade and a major war

1 The crisis as turning point

**2 The opportunity spaces for innovation**

3 The example of mass production

4 The current global opportunity spaces

5 The triple challenge



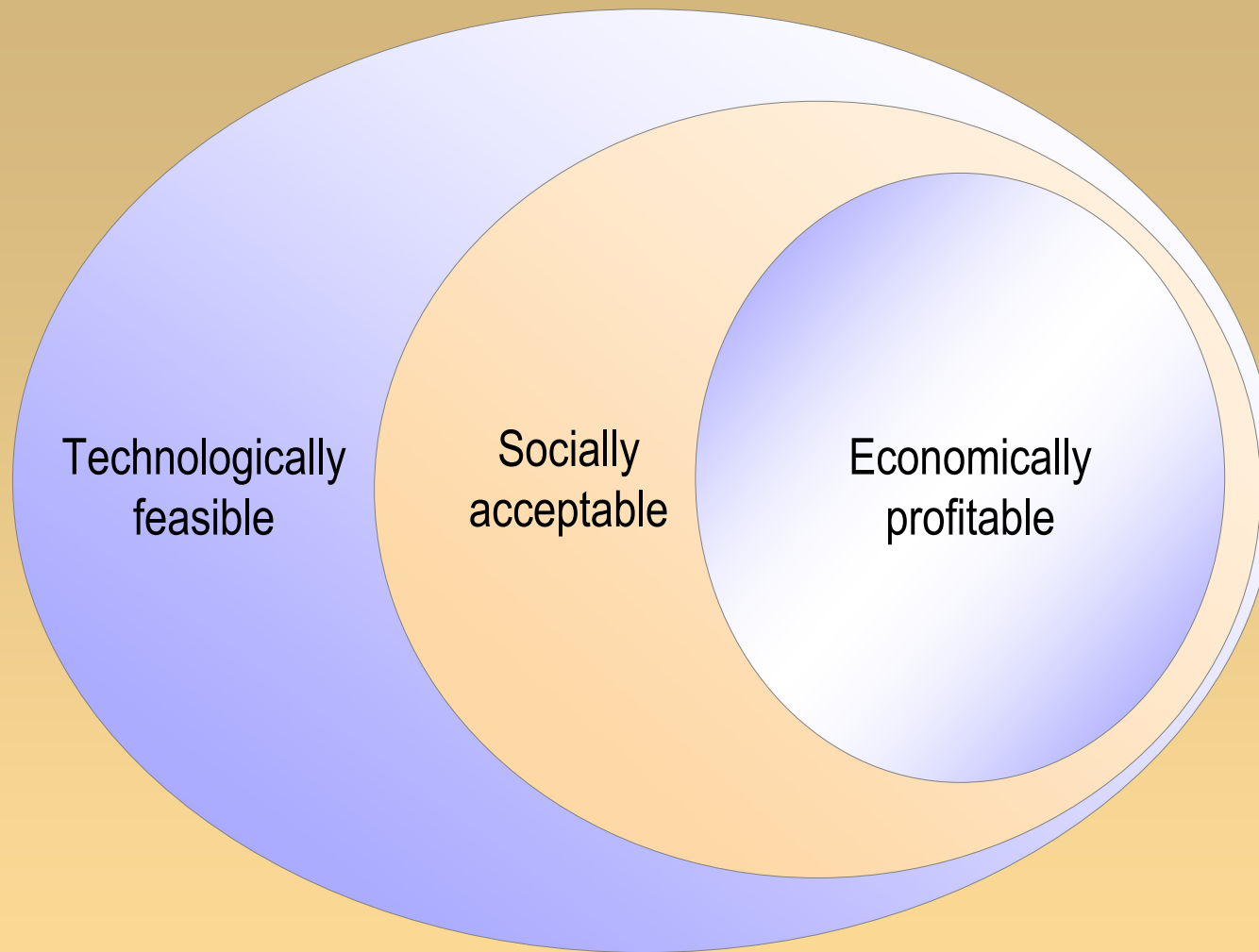
As Schumpeter held:

**GROWTH IS DRIVEN BY INNOVATION**

But not by isolated innovations  
but by interrelated  
systems of innovation  
leading to growing synergies  
and externalities

...and, obviously, to drive growth  
innovations must be  
**PROFITABLE!**

# TECHNOLOGY ONLY DEFINES THE SPACE OF THE FEASIBLE



The factors defining the space of the acceptable and the profitable change over time  
... AND ARE ALSO CHANGEABLE!

Coming to grips with innovation  
INTRODUCING THE CONCEPT  
OF OPPORTUNITY SPACES

**SUPPLY**  
opportunity space for innovation



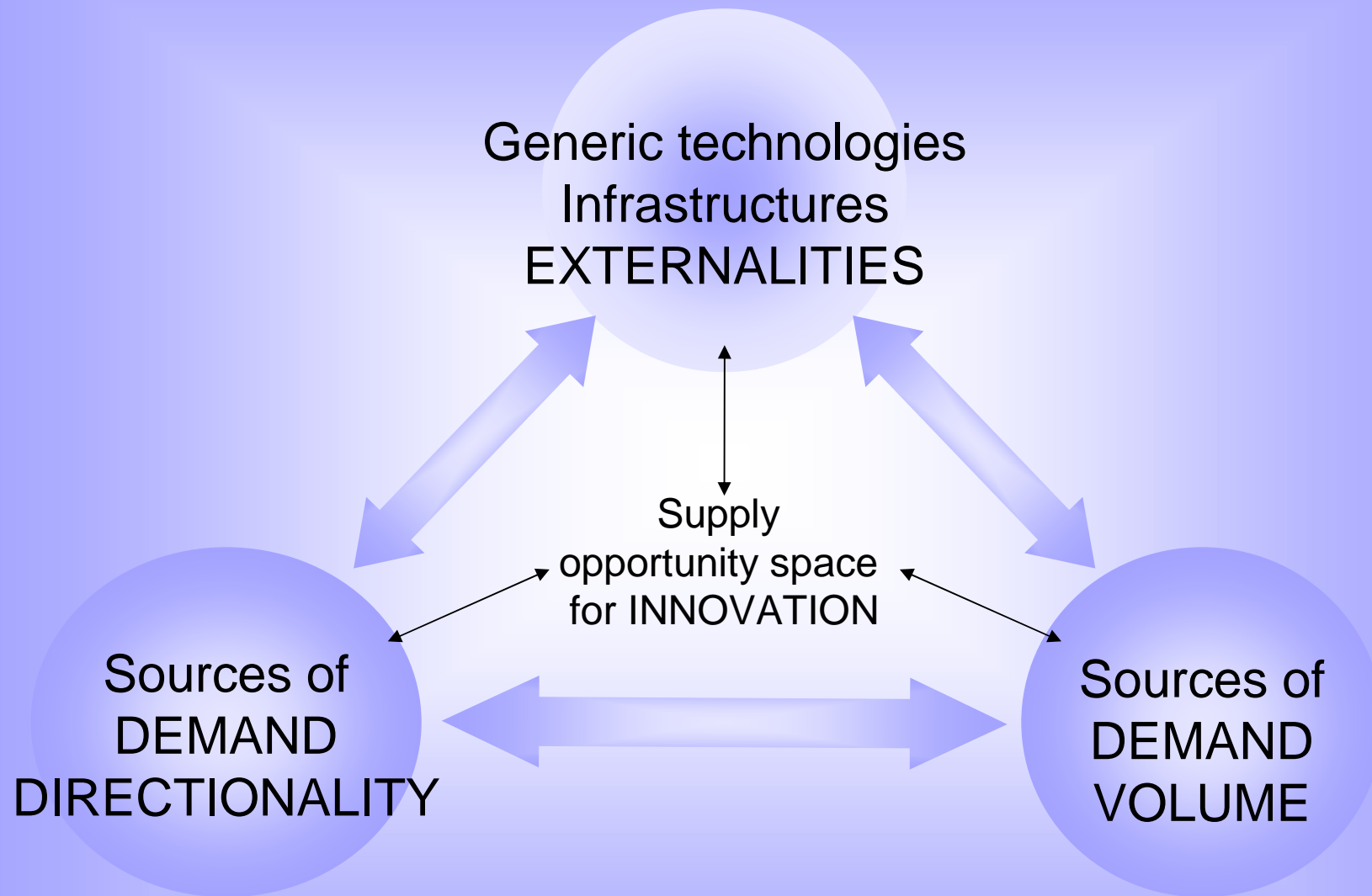
**DEMAND**  
opportunity space for innovation

The range  
of innovations  
that are technologically feasible  
and the global, national or local  
capabilities  
that can bring it to fruition

The range of innovations  
that are economically profitable  
and socially acceptable  
as defined --and modified--  
by institutional, social, cultural,  
economic, political  
and contingent factors

THE BETTER THE MATCH  
BETWEEN THE DEMAND AND SUPPLY SPACES  
THE MORE DYNAMIC THE ECONOMY

# THE ELEMENTS OF THE DEMAND OPPORTUNITY SPACE



The coherence and synergy among the elements generates self-reinforcing loops

1 The crisis as turning point

2 The opportunity spaces for innovation

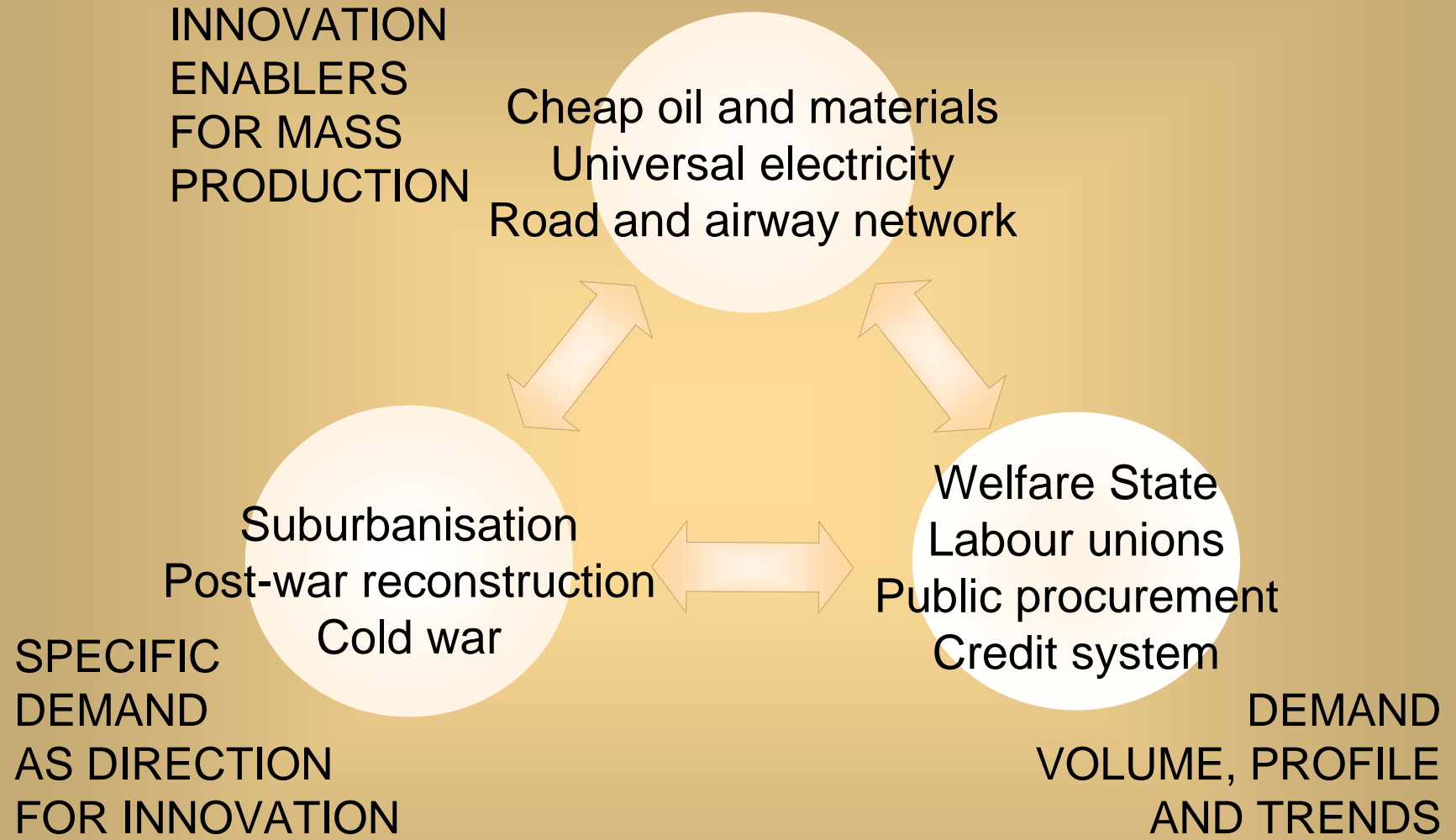
**3 The example of mass production**

4 The current global opportunity spaces

5 The triple challenge



# The demand opportunity space that shaped the Post War Golden Age



The various elements were provided in different proportions in each "First World" country

Keynes did see beyond simple quantitative aggregate demand  
AND IDENTIFIED SPECIFIC OPPORTUNITY SPACES

In a letter to President Roosevelt in 1938, he recommended:

“Increased investment in ...  
housing, public utilities [electricity], and transport...”

“Housing is by far the best aid to recovery...  
I should advise putting most of your eggs in this basket...”

“...the growth of collective bargaining ... essential

“...I approve minimum wage and hours regulation.  
... a policy of general wage reductions ... useless”


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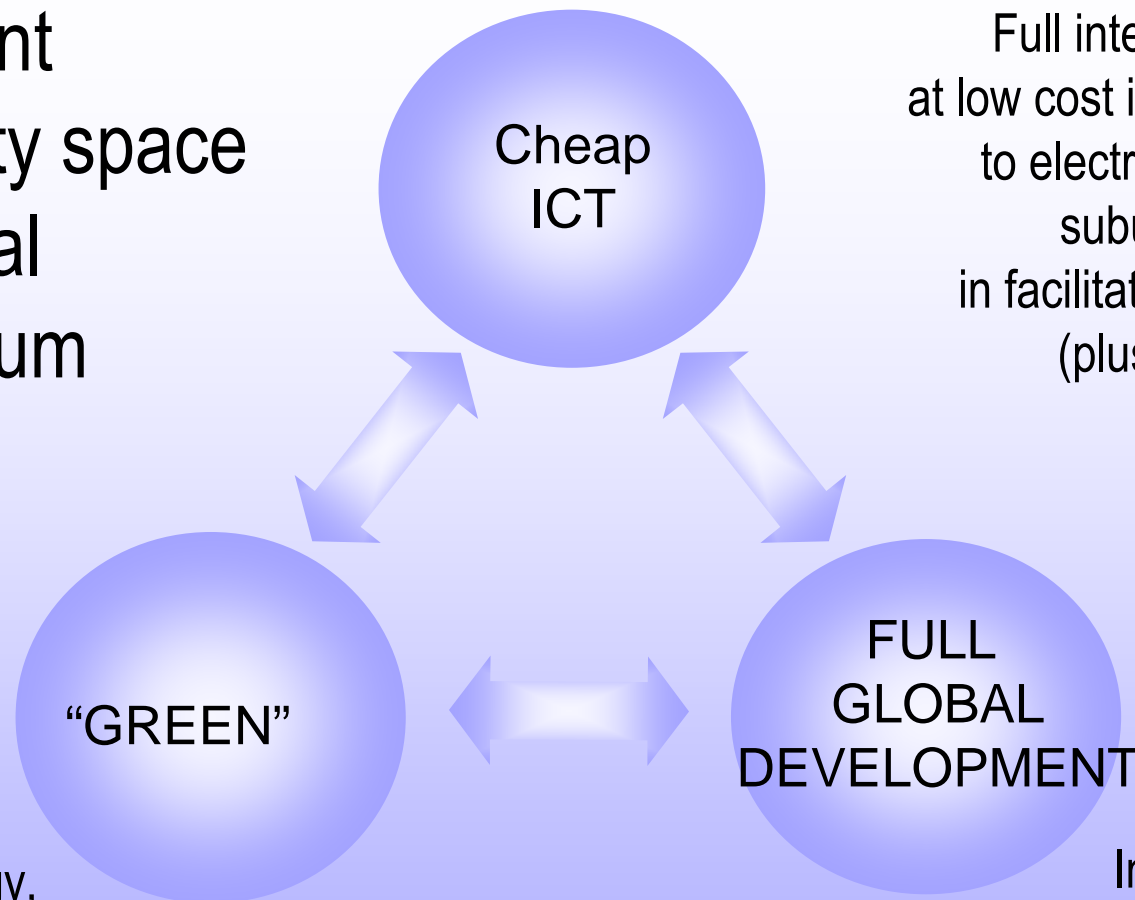
After more than three decades  
of diffusion  
of the information and communications technologies  
and of their application to modernise  
and rejuvenate all other industries

There is enough technological potential  
and enough knowledge about it  
among producers and consumers

to innovate across all sectors of the economy

**AND DRIVE A GLOBAL GOLDEN AGE**

The current opportunity space for a global positive-sum game

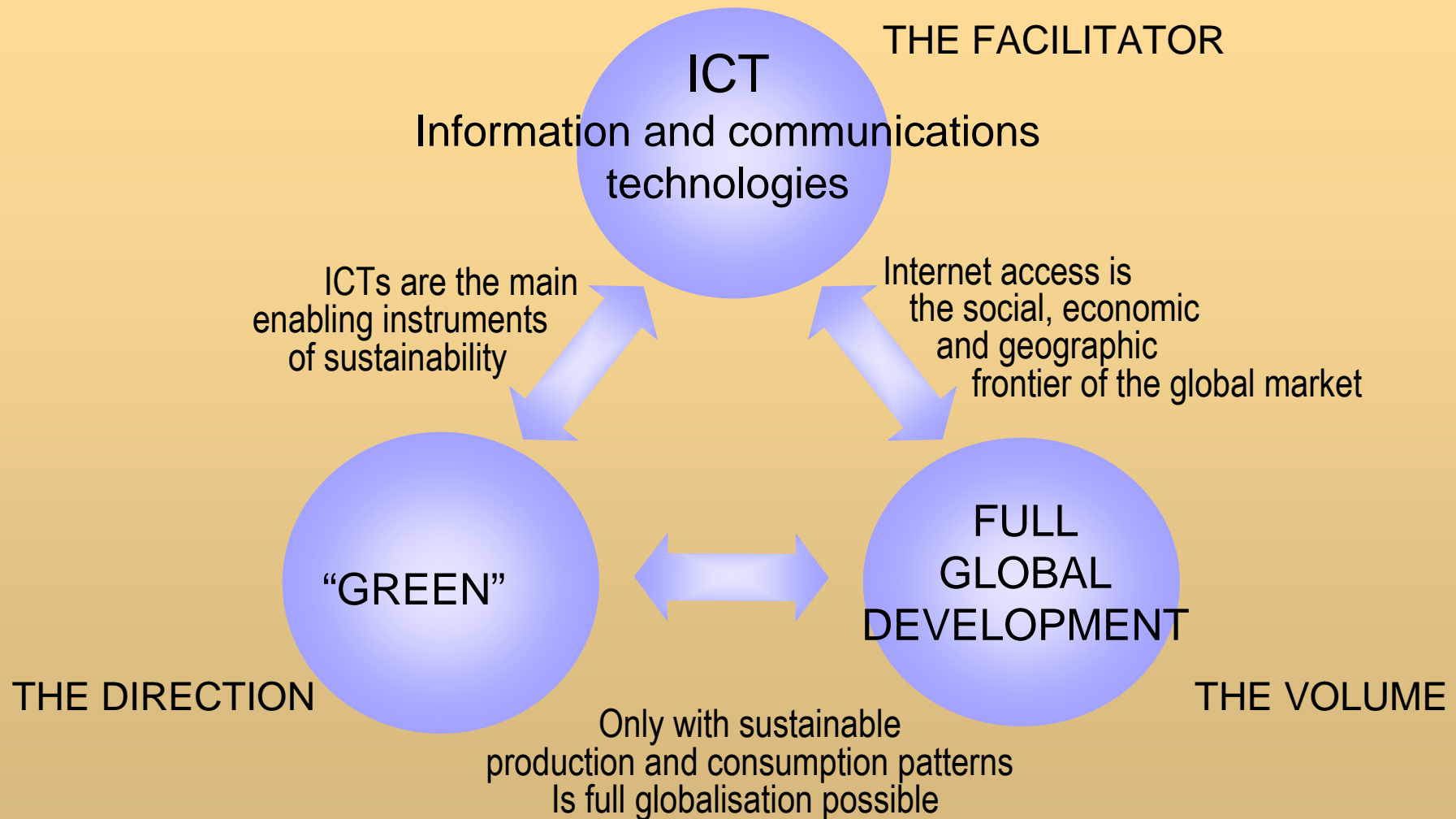


Full internet access at low cost is equivalent to electrification and suburbanisation in facilitating demand (plus education)

Revamping transport, energy, products and production systems to make them sustainable is equivalent to post-war reconstruction and suburbanisation

Incorporating successive new millions into sustainable consumption patterns is equivalent to the Welfare State and government procurement in terms of demand creation

The three forces defining the opportunity space are interdependent



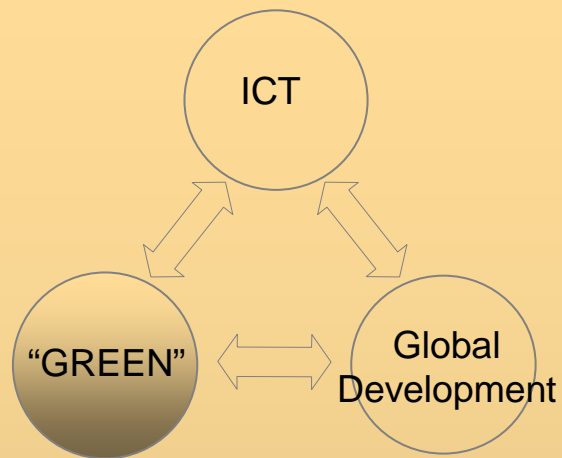
There is enough space and potential to lift all boats  
but the markets cannot do it without the support of enabling policies

Before we continue, I would like to share  
**THE PREMISES OF THESE REFLEXIONS**

- We are in the capitalist system  
where growth is driven by innovation  
and business is driven by personal ambition for profits
- The legitimacy of capitalism depends on  
whether individual “greed” results in collective benefits
- Golden Ages are about a positive-sum games  
between business and society
- Neither business nor society always know  
what will bring them optimal benefits beyond the short term

Intelligent, informed and competent governments  
can promote the consensus required  
to define the positive-sum game

**STRONGLY BIASED ARRANGEMENTS  
ARE ECONOMICALLY AND SOCIALLY UNSTABLE**



## THE QUESTION OF DIRECTION

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The societal challenges posed by the environment  
are not just for saving the planet...

They are the best route for saving the economy!

And they are also the most effective means  
for increasing the well-being of the many



Each technological revolution has led to a change in consumption patterns with new life-shaping goods and services at 'affordable' prices

DEPLOYMENT PERIOD

LIFESTYLE

1850s-1860s

Urban industry-aided  
VICTORIAN LIVING in Britain

1890s-1910s

Urban cosmopolitan lifestyle of  
THE BELLE EPOQUE in Europe

1950s-1960s

Suburban energy-intensive  
AMERICAN WAY OF LIFE

Each style became "the good life" that shaped people's desires and values and guided innovation trajectories

2010s-20??s

Will the developed and emerging countries  
develop a variety of ICT-intensive  
"GLOCAL" SUSTAINABLE LIFESTYLES ???

EACH SHIFT IS DRIVEN BY THE NEW TECHNOLOGIES  
AND THE WAY THEY CHANGE RELATIVE COSTS AND INNOVATION POTENTIAL

The techno-economic paradigm shift from the 1970s

FROM THE LOGIC  
OF CHEAP ENERGY (oil)  
for transport, electricity,  
synthetic materials, etc.

TO THE LOGIC  
OF CHEAP INFORMATION  
its processing  
transmission and productive use

Producers' preference  
for tangible products  
and disposability  
Unthinking use  
of energy and materials

Producers' preference for services  
and intangible value  
Huge potential for savings  
in energy and materials

Unavoidable  
environmental destruction

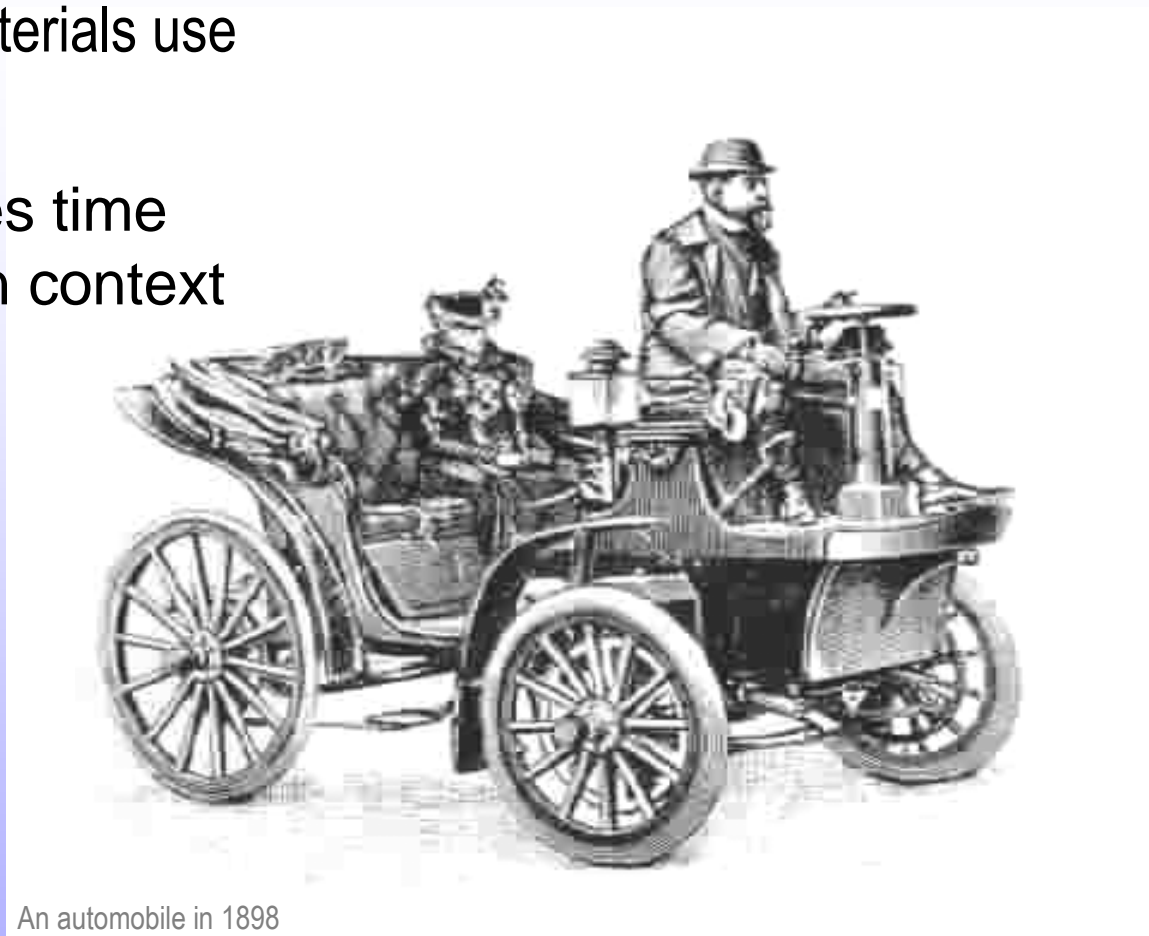
Capacity for  
environmental friendliness

It is a huge shift in the supply opportunity space for innovation,  
promising growth and radical changes in lifestyles

Yet, mass production disposability and high energy and materials use are still with us

A paradigm shift takes time and many changes in context

The first automobiles also looked like horse-driven carriages



An automobile in 1898

As long as oil and transport continue to be cheap the mass production strategies will be shaping business behaviour in the ICT world

## THE KNOWN BUT LARGELY UNREALISED POTENTIAL OF ICT AND “GREEN” FOR PRODUCERS

REDUCE

Energy consumption  
Materials use  
Emission of pollutants, etc.

RE DESIGN

Materials / Products  
Processes / Logistics, etc.


COORDINATE  
AND OPTIMISE

Disparate technologies  
Transport routes and means  
Value chains, etc.

REPLACE

Products with services  
Travel with telecoms  
Paper with iPads, etc.

But the technologically feasible only becomes reality when facing a good opportunity space  
SOCIAL VALUES, POLICIES, REGULATIONS, COSTS AND RELATIVE PRICES  
ARE THE ULTIMATE DRIVERS OF THE SHIFT



Yet the main consequence  
of strongly turning the environment  
into a central element of the opportunity system

IS DEFINING A LIFESTYLE  
DIFFERENT FROM MASS CONSUMERISM

Once the change in consumer values begins  
it is a mutually-reinforcing loop with the producers

BUT THE SHIFT CANNOT BE MOVED  
BY GUILT OR FEAR  
BUT BY DESIRE AND ASPIRATION

## THE CHANGE IN PREFERENCES BEGINS AT THE TOP OF THE INCOME SCALE AND SPREADS BY IMITATION ...AND AFFORDABILITY

Part of the paradigm shift  
is already happening  
among the most sophisticated  
consumers

There is still  
a long way to go

- Natural vs. synthetic
- Minimalist design
- 'Gourmet' and organic food
- Exercise for well being
- Small vs. big
- Multipurpose products
- Working from home
- Solar power as luxurious  
as well as electric cars
- Intense Internet use
- Durability
- High quality vs. quantity
- Reparability and upgradability
- Anti-waste, pro-recycling
- Low carbon footprint
- Customised vs. standard
- Services vs. tangible products
- Active & creative "prosumer"  
vs. passive consumer
- Etc. etc.

MUCH ALSO DEPENDS ON THE MARKETING STRATEGIES OF COMPANIES  
WHICH IN TURN DEPEND ON THE BEST DIRECTIONS FOR PROFITABILITY

And the direction of profitability  
will depend on relative prices and dynamic demand

A CLEAR RISE IN THE PRICES  
OF NON-RENEWABLE RESOURCES  
WITH A STABLE AND RELIABLE UPWARD TREND  
WOULD RESULT IN AN ENERGY AND MATERIALS-SAVING BIAS

Markets will eventually do it, but...

We don't need to wait for the unavoidable scarcity to be reached

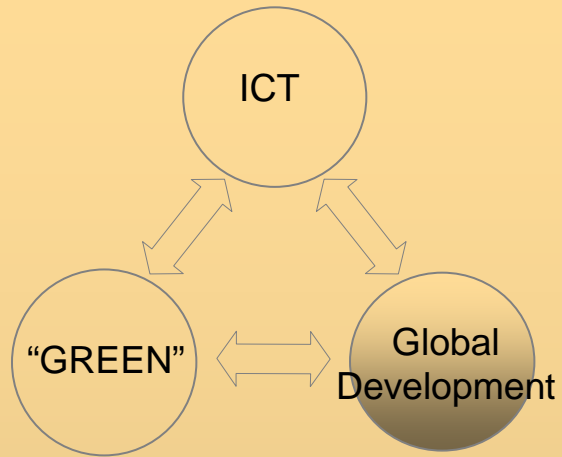
TILTING THE PLAYING FIELD TOWARDS "GREEN" NOW  
WOULD GIVE TIME TO BRING FORTH THE NECESSARY INNOVATIONS

AND YET...  
HOW CAN BUSINESS PROFITS  
SURVIVE  
IN A WORLD WHERE  
GOODS ARE NOT DISPOSABLE?

Planned obsolescence was precisely a strategy developed  
to face limits to market volume

WHERE  
WOULD DEMAND GROWTH  
COME FROM?





## THE QUESTION OF PROFITABLE DEMAND VOLUME

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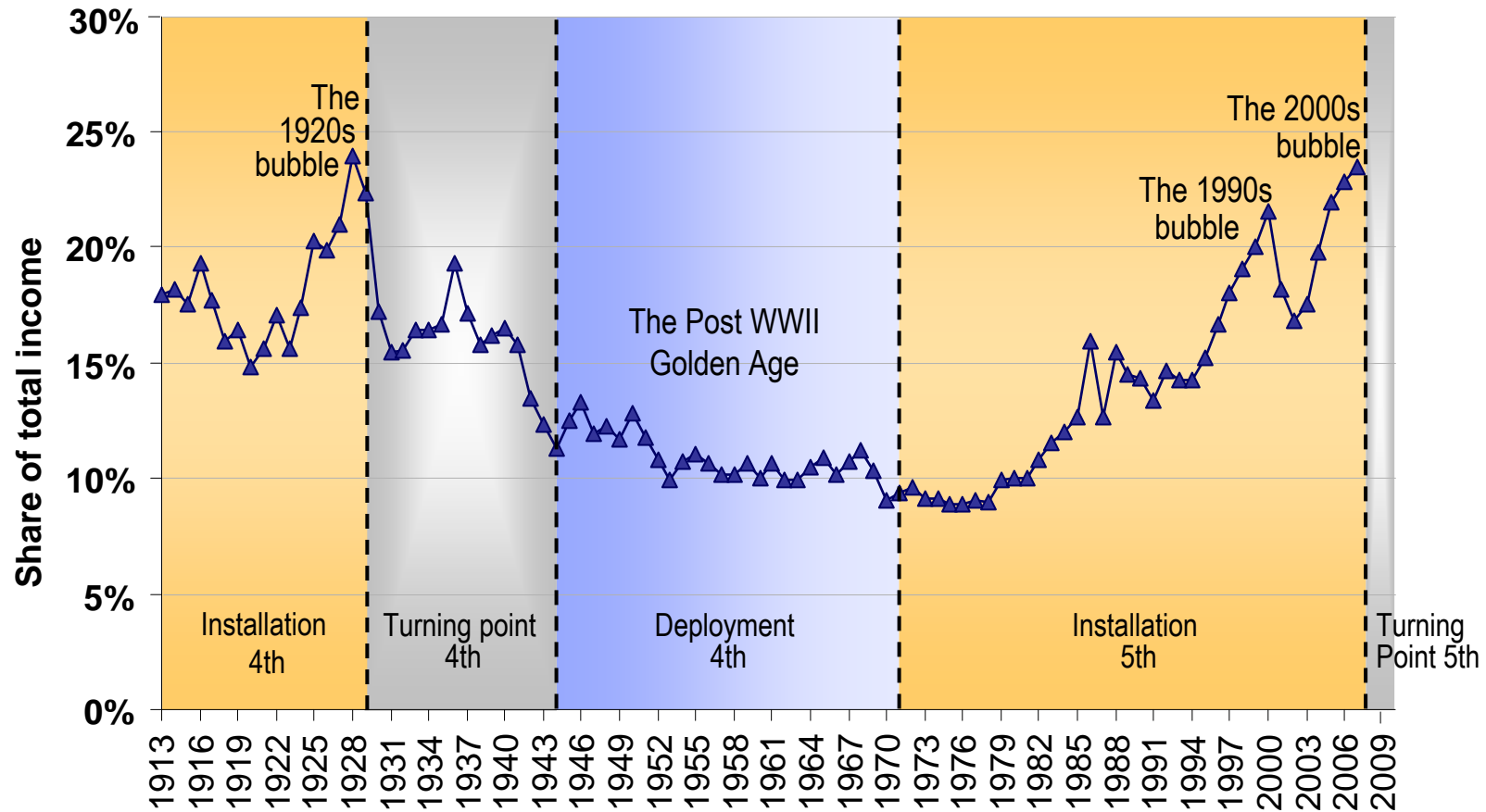
Successive new entrants are the best solution  
for healthy and profitable market growth  
with minimum resource use

Full global development is not only a humanitarian goal

It is an economic and environmental imperative today


# Income polarisation is typical of installation periods and major bubble times

Top 1% of income tax payers USA 1913 - 2007



Source: Piketty and Saez 2010

Golden Age deployment periods tend to (partially) reverse the process widening the demand opportunity space



This time polarisation has happened  
both across the globe and within each country

And the globalisation process  
has been biased towards Asia  
not replacing the job losses in the advanced world  
and leaving whole continents marginalised

**GLOBALISATION CAN BE MORE BALANCED**

Part is likely happen  
through the rise in energy and transport costs  
The rest through national and global policies  
shaping the demand opportunity space

**AND ALL COUNTRIES WOULD GAIN IN THE PROCESS**



## GLOBALISATION

is not about the demise of the state  
but about the possibility of global development  
across a highly differentiated economic space

Up to now, markets worked upon  
the pre-existing differentiation  
and transformed the economic space

It is time for each nation state and region  
to identify advantageous directions

**FOR SPECIALISATION AND RESPECIALISATION**  
and define the role they will play on the global stage

## THE VARIETY OF OPPORTUNITY SPACES

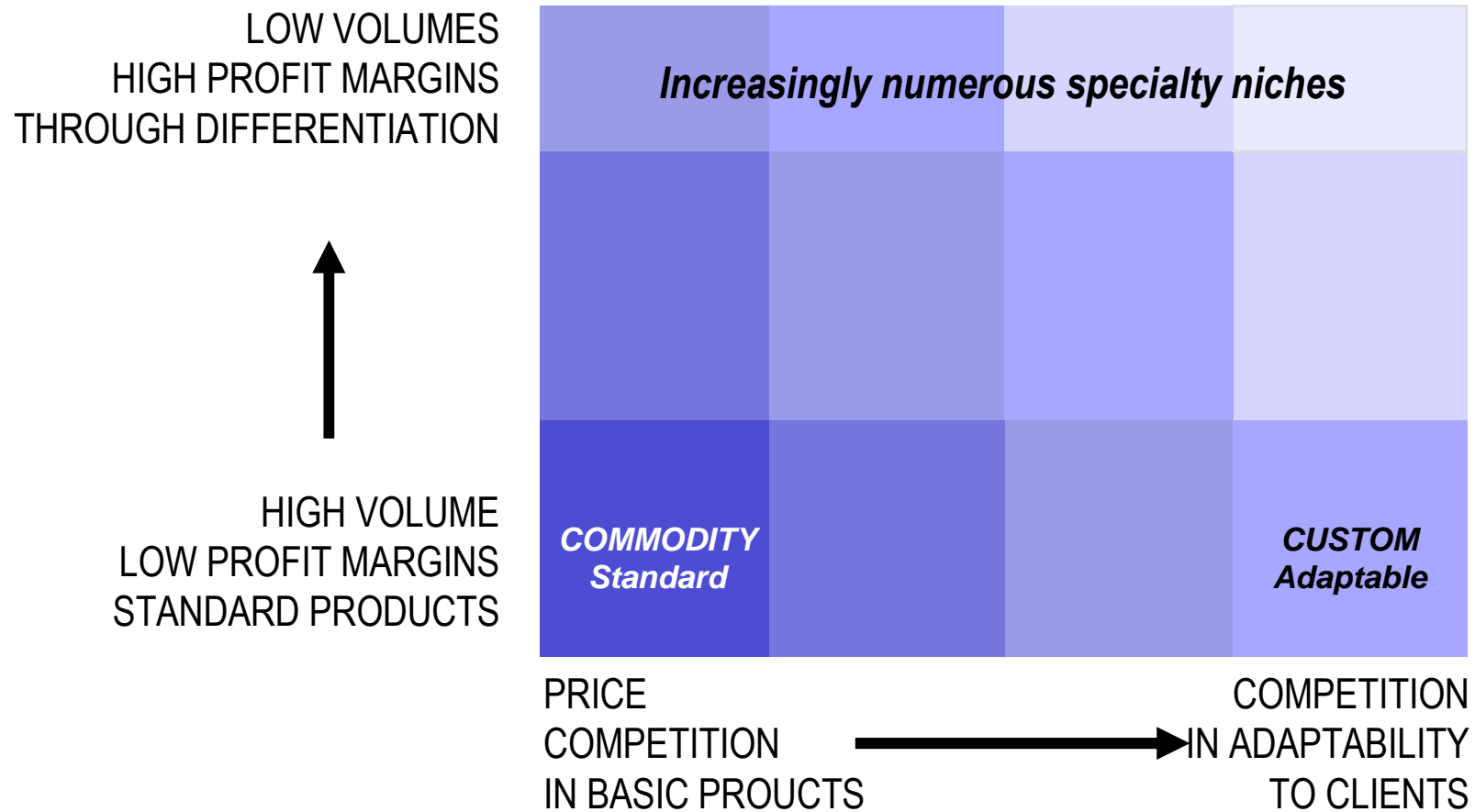
- Hyper-segmentation of all product markets (including materials)
- Decomposition of value-chains by global corporations
- “Peaceful coexistence” of different technological levels  
(ex. organic and standardised; “frugal” and highly sophisticated)

## WITH SPECIALISATION AND RESPECIALISATION COME THE ADVANTAGES OF NETWORK SYNERGIES

- through aiming at “demand opportunity complexes”  
(ex. Sports and leisure, creative industries, alternative transport)
- and through collaboration to supply “complex product systems”  
(ex. multi-source interactive power grids, high speed railways)

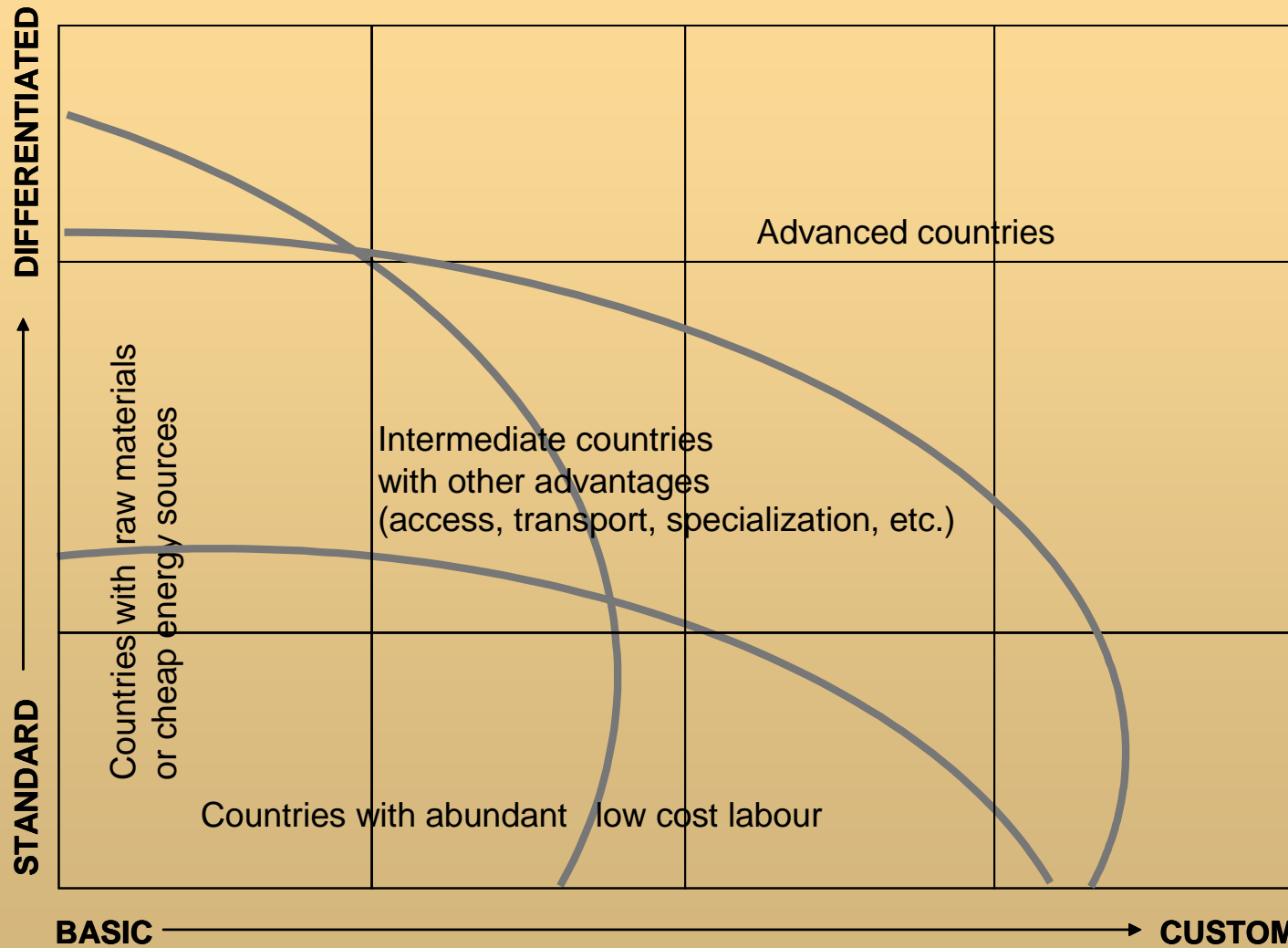
THERE IS ENOUGH OPPORTUNITY SPACE FOR ALL  
AND DEMAND WOULD GROW FOR MUTUAL BENEFIT

# THE HYPER-SEGMENTATION OF MARKETS AND ITS DIFFERING OPPORTUNITIES




And this applies from raw materials to all manufacturing and services  
and to each activity along the value chain

# A possible pattern of global respecialization by regions...



...though each country would cover the whole spectrum in different proportions



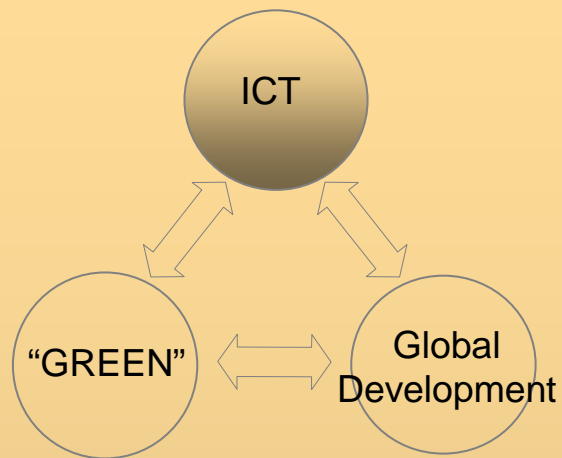
Differentiated economic expansion across the planet would mean jobs, incomes and dynamic markets at home and globally for all countries

Finding effective ways of enticing materials and energy-saving innovation and lifestyles would create jobs and markets, besides saving the planet

And, since resources are limited, global development with the “American Way of Life” would be impossible, anyway

**GREEN GLOBALISATION COULD INDEED BE  
A POSITIVE-SUM GAME**





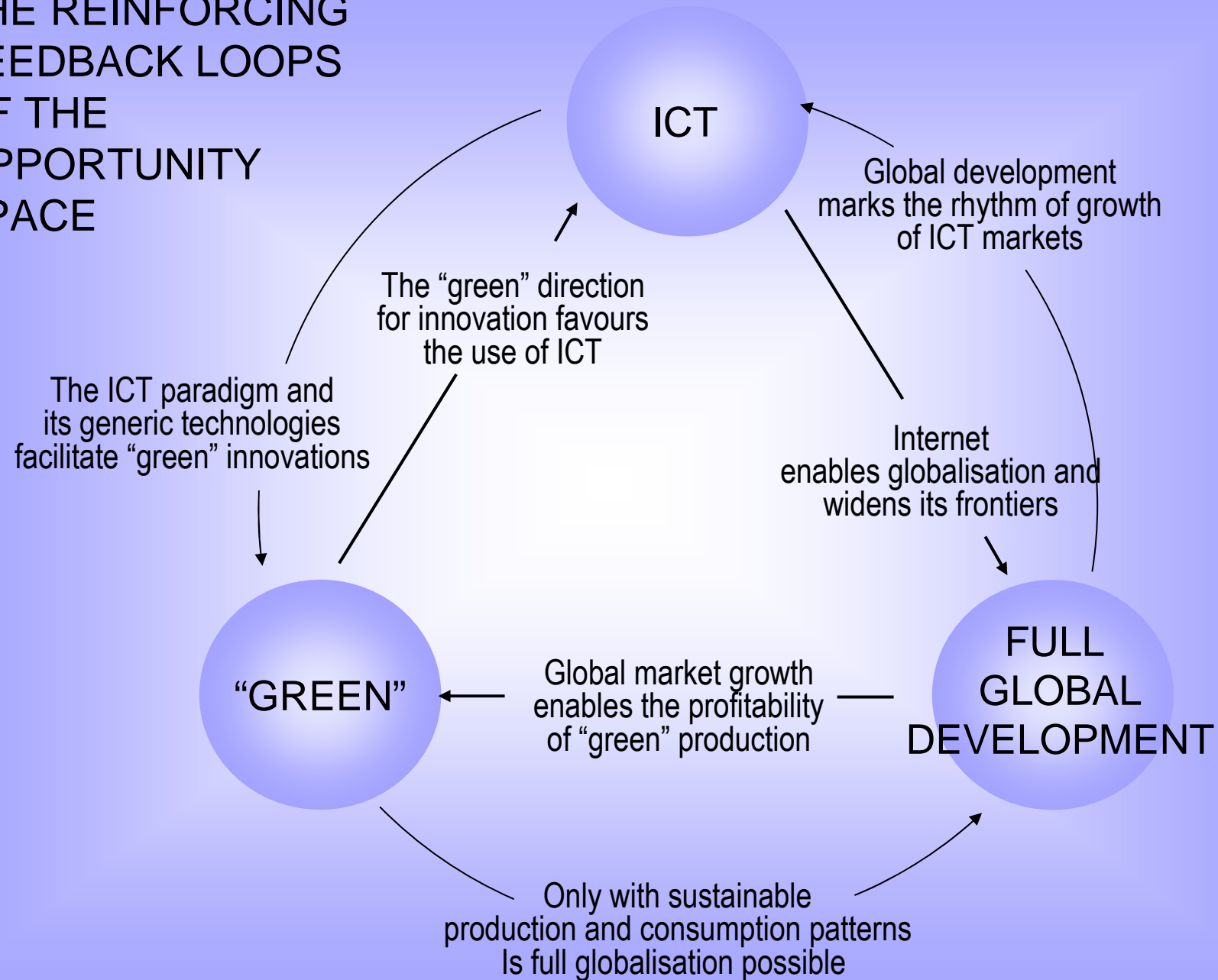
## ICT AS THE TECHNOLOGICAL FACILITATOR

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ICT has made globalisation possible  
and can support environmentally sustainable innovation  
across all industries, sectors and activities

ICT markets and global development  
can set up a mutually-reinforcing feedback loop

# THE REINFORCING FEEDBACK LOOPS OF THE OPPORTUNITY SPACE



## A LONG-TERM POSITIVE SUM GAME

Advanced, emerging and  
developing countries

The range of the feasible is wide enough  
for each to identify opportunity spaces  
and shape demand conditions in consensus directions  
Home and global trade would provide market growth for all

GLOBAL BUSINESSES

Demand shaping policies would create  
stable differentiated spaces across the globe  
for sourcing production and targeting markets

LOCAL BUSINESSES

Would flourish everywhere  
favoured by direct access to consumers or resources  
and by avoiding high transport costs

The population  
of all countries

Would experience employment growth  
and increasing quality of life  
while maintaining cultural identities

1 The crisis as turning point

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**5** **The triple challenge**

Each technological revolution sets the space of the possible in wealth creation

**THE SOCIO-POLITICAL FORCES SHAPE THE DIRECTION**

**Mass  
production**

**Flexible  
production  
(ICT)**

**EQUALITY = HOMOGENISATION**

Welfare State: workers as “middle class”

“One best way”: The American Way of Life

International core and periphery

**NATIONAL GOLDEN AGES IN THE WEST**

**“EQUIVALENT SATISFACTION”?**

Global rise in the quality of life?

Different sustainable “glocal” lifestyles?

Development across all countries?

**A GLOBAL GOLDEN AGE?**

## THREE MAJOR CHALLENGES

- A political challenge
- A policy challenge
- A research challenge

The political challenge

A TRIPLE ALLIANCE  
TO BUILD A PROGRAMME  
FOR A SUSTAINABLE GLOBAL GOLDEN AGE

**Social democracy**  
**greens**  
**and development advocates**

AIMING TO ENGAGE THE BUSINESS WORLD  
IN A POSITIVE-SUM GAME

## The policy challenge

THE INSTITUTIONAL INNOVATIONS REQUIRED BY SUCH A PROGRAMME  
WILL PITCH IMAGINATION AGAINST  
IDEOLOGICAL AND BUREAUCRATIC INERTIA

- How to change the relative cost structure
- How to get the financial world on board
- How to establish consensus building mechanisms
- How to effectively help promote and fund development in the marginalised countries
- What is the right mix of pro-environmental policies (regulation, incentives, taxes, risk reduction, guaranteed markets, subsidies, education, legislation etc. etc.)

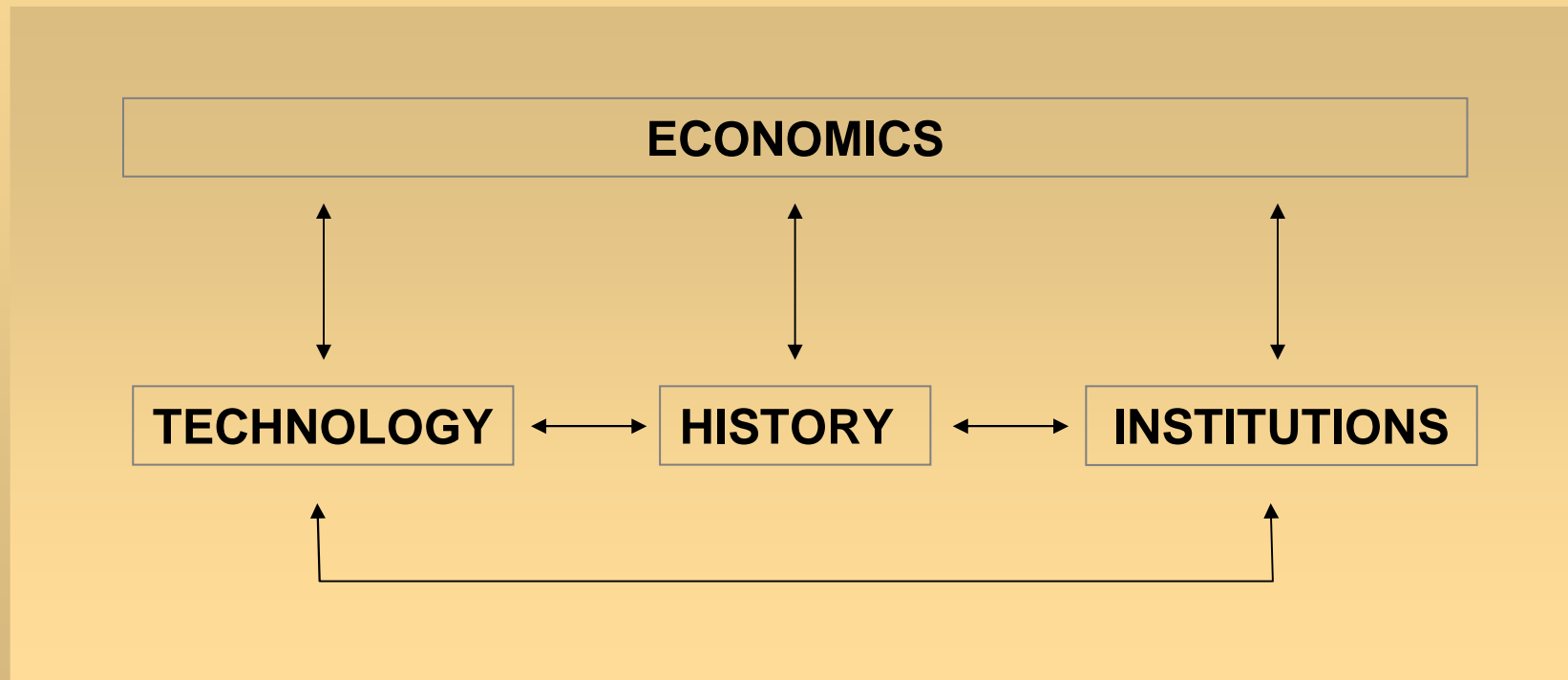
AN INTELLIGENT AND INFORMED TILTING OF THE PLAYING FIELD  
GLOBALLY, NATIONALLY AND LOCALLY



## The research challenge

Whatever you think of standard economic theory in “normal” circumstances

**INTERDISCIPLINARITY IS INDISPENSABLE  
WHEN WE NEED TO UNDERSTAND EXTRAORDINARY TIMES...**



**THAT IS THE CASE WHEN WE NEED TO SUPPORT INSTITUTIONAL CREATIVITY  
TO MAKE MAJOR POLICY SHIFTS**

IF IT IS TRUE THAT  
THE TECHNOLOGICAL STAGE  
IS SET TODAY  
FOR A SUSTAINABLE GLOBAL GOLDEN AGE...

...bringing it about  
would require determined political convergence  
and massive doses of institutional creativity

Will it be a success or a wasted opportunity?

WE SHALL ALL BE RESPONSIBLE  
FOR THE OUTCOME

Thank you!

For further reading:  
[www.carlotaperez.org](http://www.carlotaperez.org)



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