



**ICT
AND THE DIRECTION OF INNOVATION
AFTER THE FINANCIAL CRISIS**

**Looking at the future
with the aid of history**

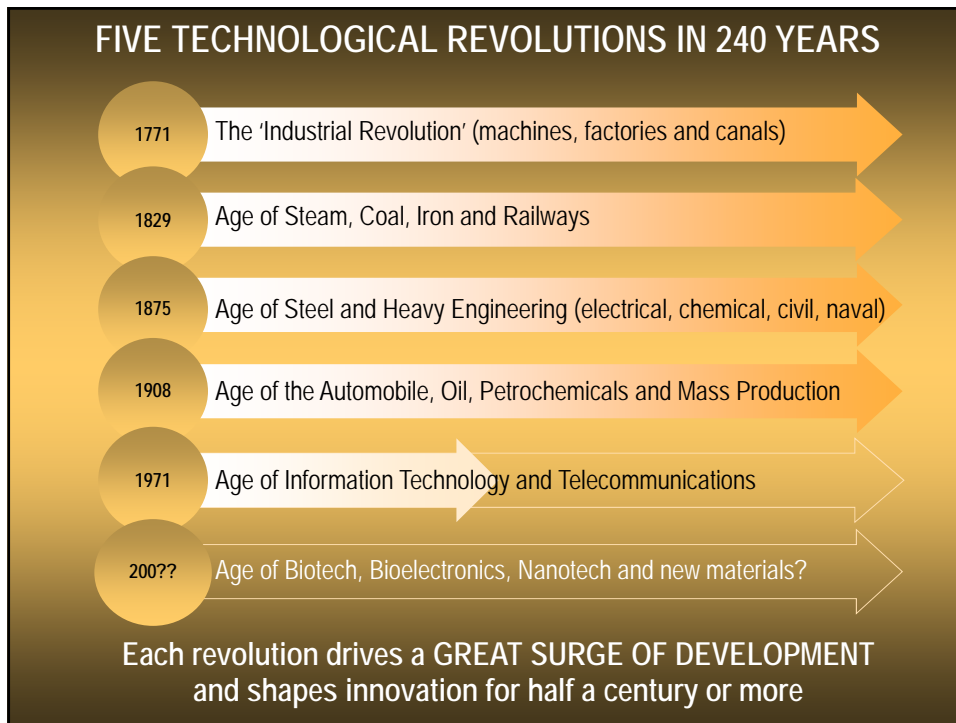
Prof. Carlota Perez
Cambridge and Sussex Universities, U.K.
and Tallinn University of Technology, Estonia

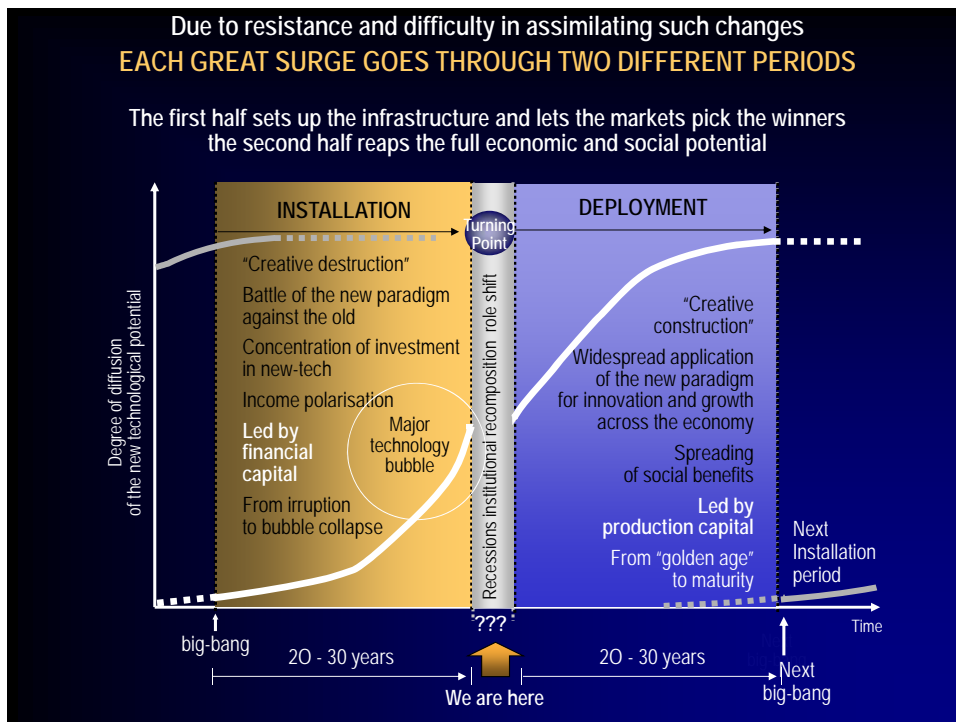
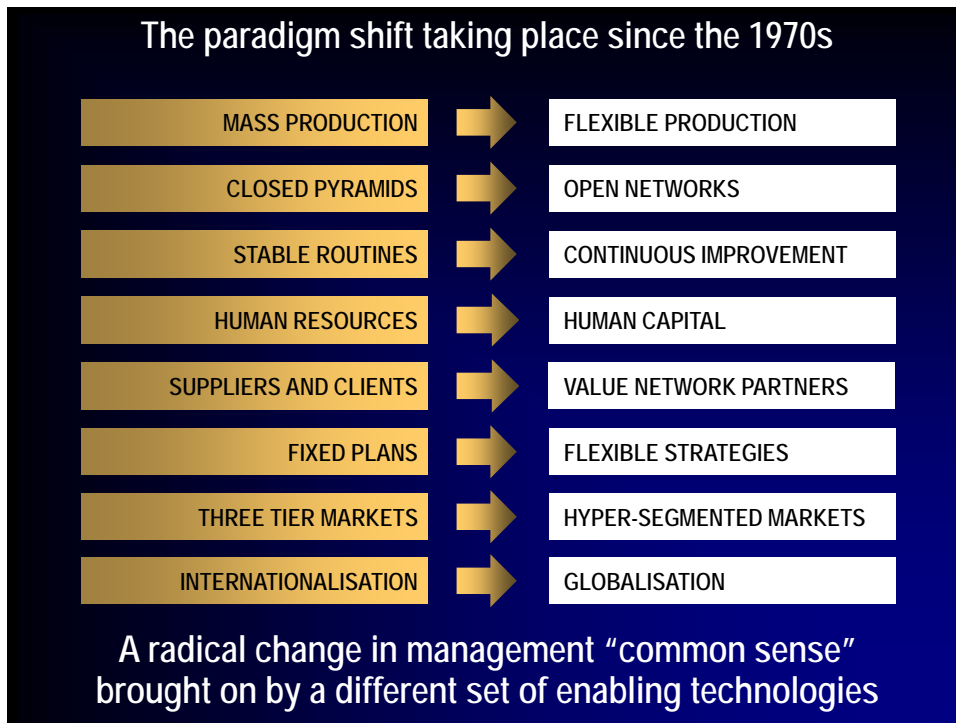
**APDC's Predictions & Broadband Summit
Lisbon, 8th July 2009**

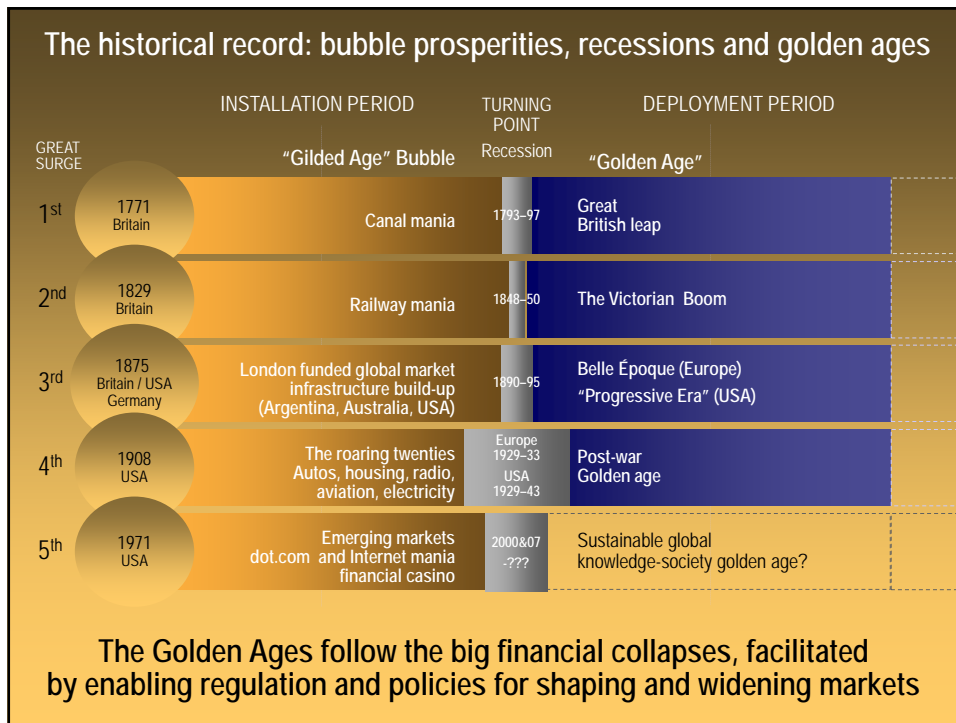
**THE CURRENT CRISIS
IS NOT AN ACCIDENTAL EVENT
IN THE FINANCIAL SYSTEM**

**It has happened before
mid-way along the diffusion
of each technological revolution**

**If history is a guide...
A GLOBAL GOLDEN AGE
MAY LIE AHEAD**







WHAT DOES ALL THIS TELL US ABOUT THE FUTURE?

That historical patterns can be a better guide than the recent past

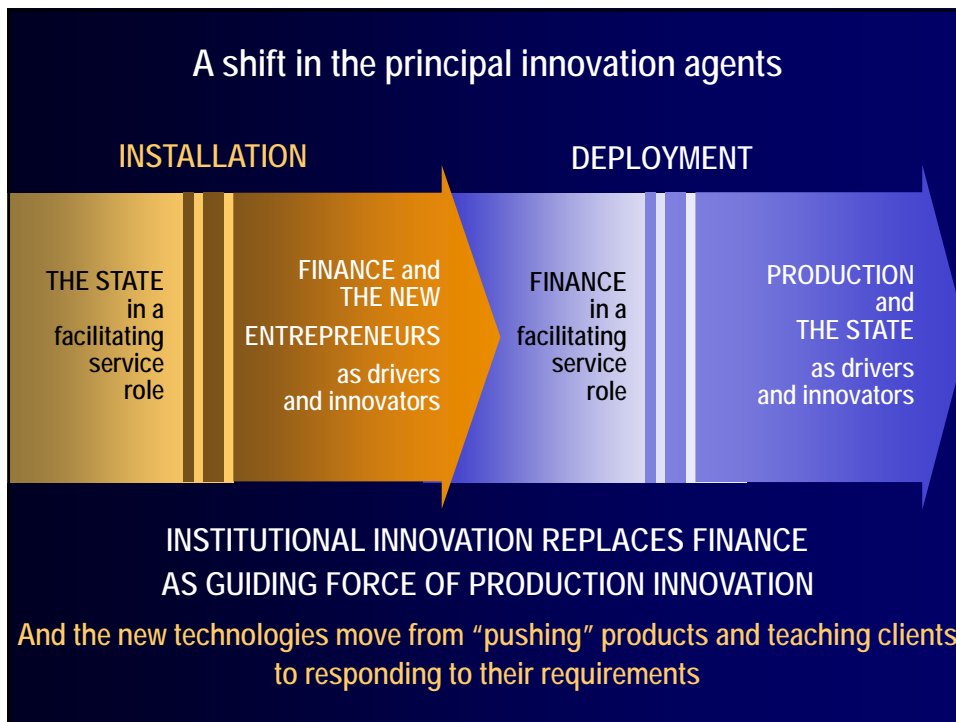
THE NEXT 20 YEARS WILL BE VERY DIFFERENT FROM THE LAST 20

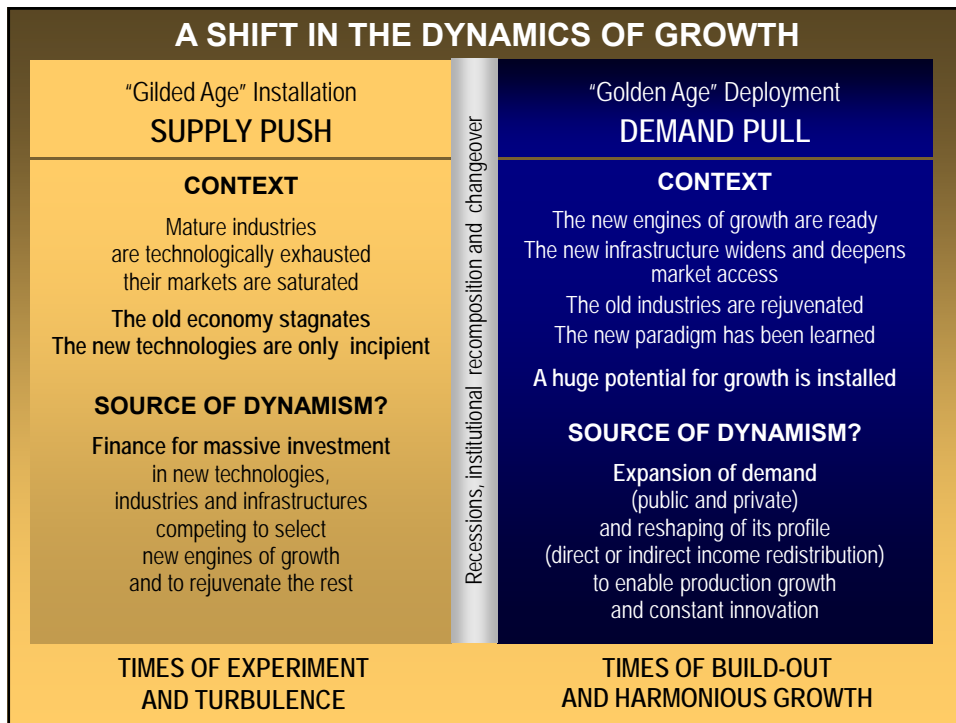
**WE ARE NOT FACING
AN ACCIDENTAL FINANCIAL CRISIS
BUT A RECURRENT STRUCTURAL SHIFT**

**IT IS THE WATERSHED
OF THE CURRENT GREAT SURGE:**

- Moving from laissez faire to the active come-back of the State
- Passing control of investment from financial to production capital
- Shifting from supply-push to demand-pull in investment and innovation
- Moving from individualist focus to collective interests

**AND THIS TIME
IN A GLOBALISED ECONOMY**

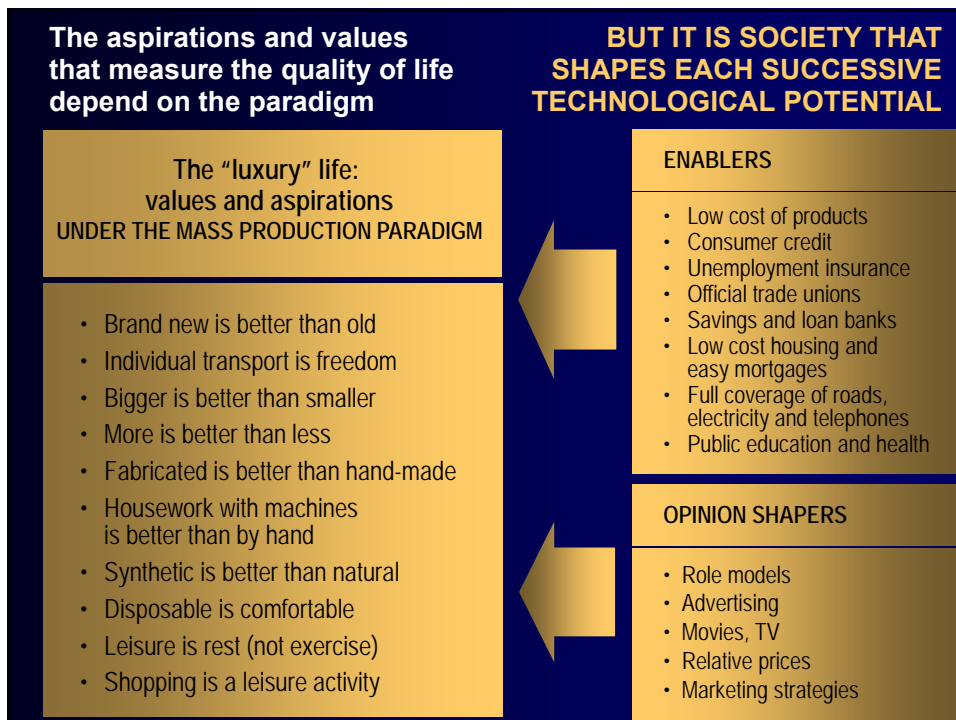
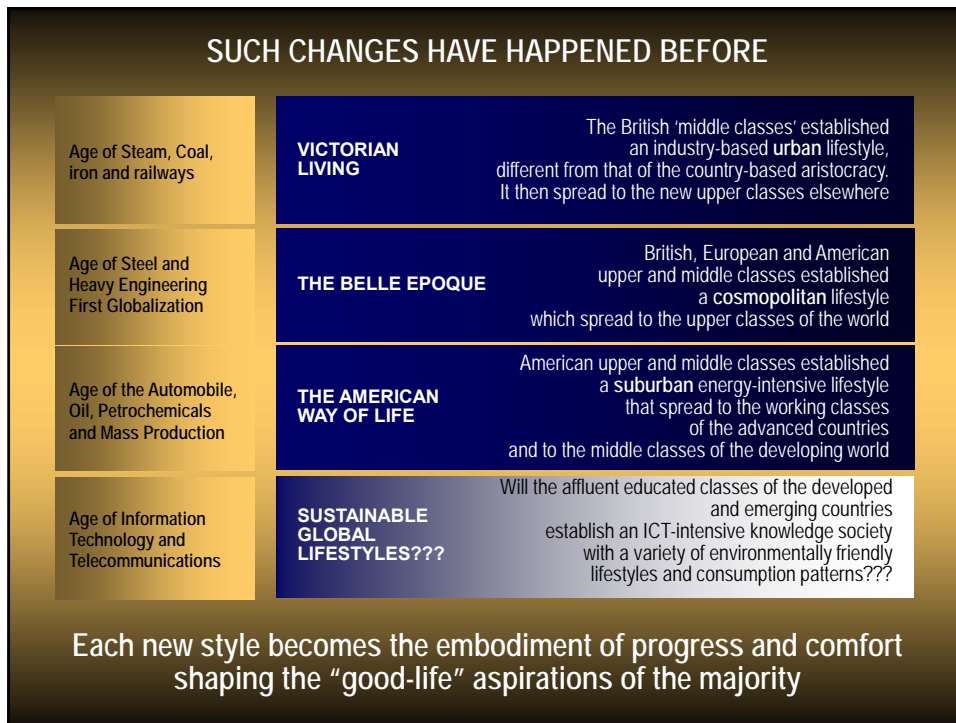


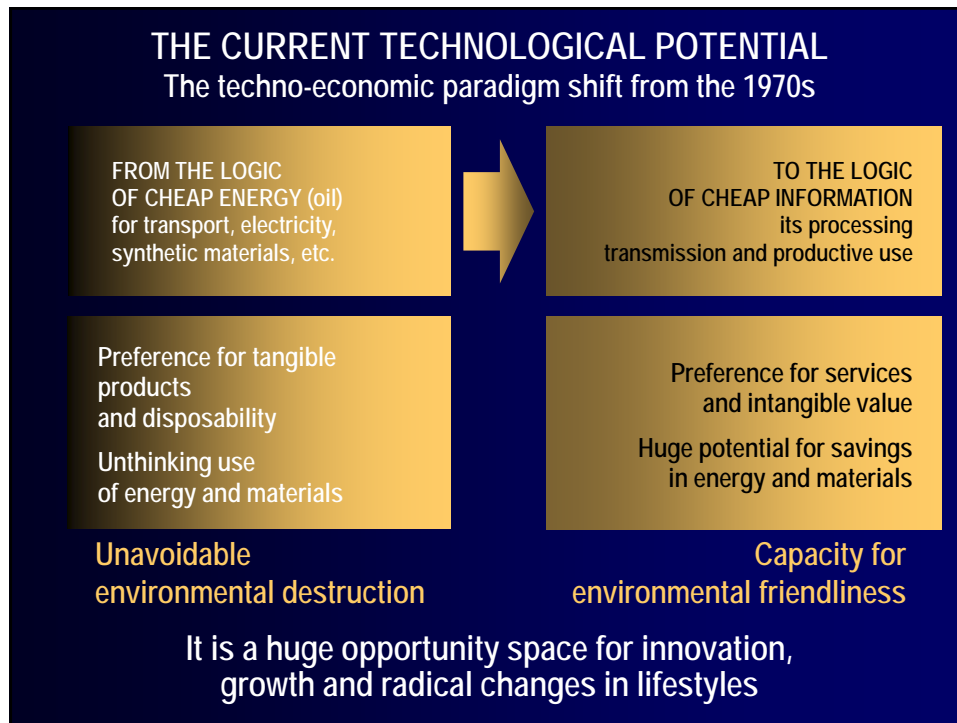


HARMONIOUS GROWTH IN DEPLOYMENT DEPENDS ON ADEQUATE POLICIES AND CHANGING SOCIAL VALUES TO MAKE THE BEST OF THE TECHNOLOGICAL POTENTIAL

And that means: GUIDING DEMAND!

The potential is there to bring a sustainable and diversified knowledge society across the globe with a pattern of satisfaction very different from "consumerism"





THE NEW PARADIGM IS STILL WRAPPED IN THE OLD

It's just like the first automobiles that began looking like horse driven carriages



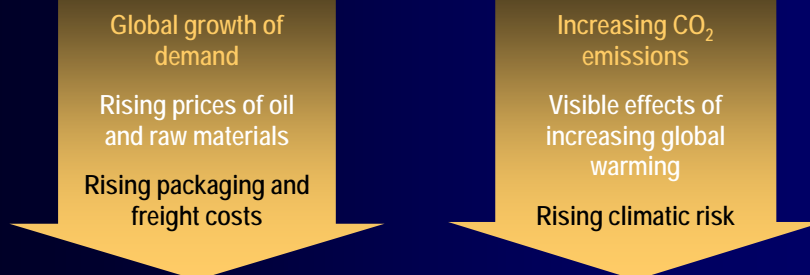
An automobile in 1898

L.De Vries. 1972

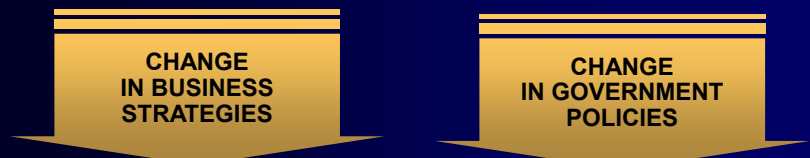
WHY? Because in the crucial 1990s we had cheap oil and cheap Asian labour which favoured the stretching of the old marketing and consumption patterns

**TO CONTINUE ON THIS ROUTE WE WOULD NEED SEVEN PLANETS!
But the market will not let us get that far**

THE UNAVOIDABLE PATH OF THE CURRENT GLOBALISATION PATTERN



CHANGE IN THE ECONOMICS OF THE PRODUCTION, TRANSPORT AND DISTRIBUTION OF TANGIBLE GOODS



Optimal relocation and geographic re-specialisation of physical production
Increasing shift from tangible to intangible production
Gradual redesign of the consumption patterns for the "good life"

**WHY WAIT
UNTIL THE PLANET FORCES US
TO CHANGE COURSE?**

**Firm and intelligent
policy action, business strategies
and social decisions
can take us there!**

**AND IT IS PROBABLY
THE ONLY EFFECTIVE WAY
OUT OF RECESSION**

**MAJOR TRANSFORMATIONS
TO EXPECT AND PARTICIPATE IN**

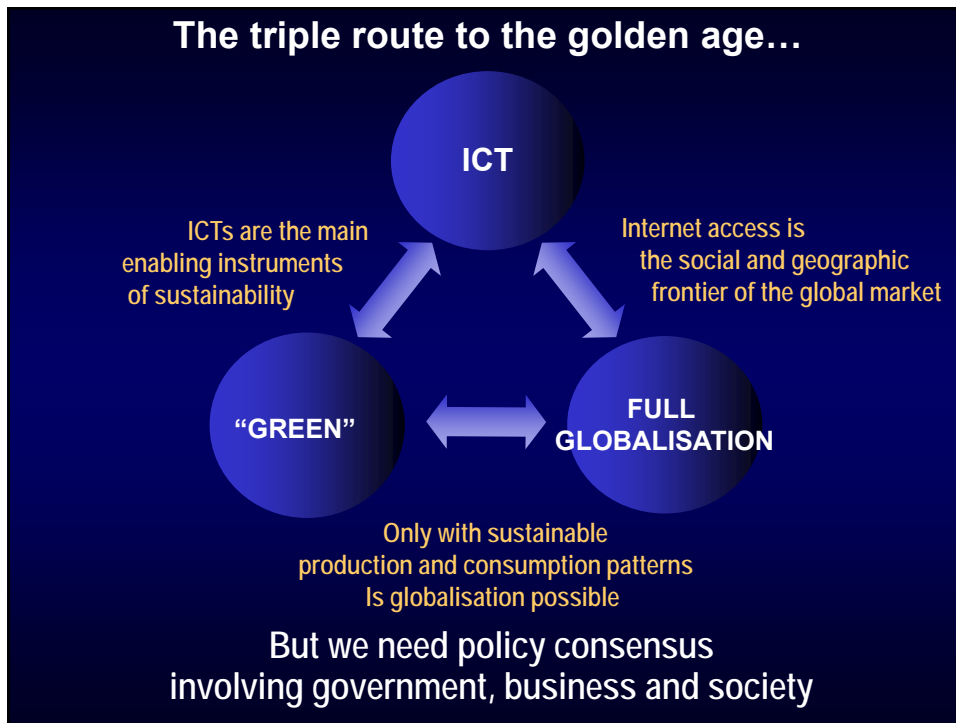
**RISING COSTS OF ENERGY,
MATERIALS AND TRANSPORT**

**POTENTIAL OF INFORMATION
AND COMMUNICATIONS
TECHNOLOGIES**

**GROWING
ENVIRONMENTAL THREATS**

- Energy systems
- Freight transport & distribution
- New materials and recycling
- Packaging and conservation
- Waste disposal
- Education
- Health and well being
- Sports and leisure
- Cultural activities
- Third Age living
- Architecture and urban planning
- Etc. etc.

**It is enough for healthy growth in the OECD countries
and across the whole developing world
(guaranteeing increasing markets for each other)**



HOW WAS THE PREVIOUS GOLDEN AGE UNLEASHED?

?

By widening demand and stretching the reach of infrastructures

SHAPING THE PROFILE OF DEMAND AND WIDENING MARKET REACH FOR THE POST-WAR GOLDEN AGE

- Reconstruction of Europe (aided by the Marshall Plan)
- Income redistribution through the Welfare State: the workers as “middle class” consumers
- Universal reach of new infrastructures (electricity roads, telephones, etc.) urban, suburban and rural
- The State as employer and as major buyer (infrastructure, military, education, health, etc.)
- Subsidies to agriculture (increasing standard of living and investment capacity in the countryside)
- Ample credit for housing and for instalment buying of cars and appliances (plus unemployment insurance)
- Funding of infrastructure projects in developing countries (World Bank and other agencies)

The new global positive-sum game



**THE TECHNOLOGICAL STAGE
IS SET TODAY
FOR THE GLOBAL GOLDEN AGE
OF THE 21st CENTURY**

**IT IS THE TASK
OF THIS GENERATION
TO MAKE IT A REALITY**