

# **SMART GREEN GROWTH**

**Innovation for the new ‘good life’  
and a prosperous society**

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Norwegian Seminar on the Green Economy, Oslo, May 2017

## What I will argue today is:

- That, because of the ICT revolution, the future is DIGITAL AND GLOBAL
- But that if we are to successfully confront the challenges of slow growth and unemployment IT MUST ALSO BE GREEN,
- That it cannot be shaped by the markets alone, without policy guidance, and...
- **...perhaps most importantly,  
THAT EUROPE CAN TAKE THE LEAD  
IN BUILDING THAT “SMART GREEN” FUTURE**

1

**WHY NOW?**

2

**WHY 'GREEN'?**

3

**WHY EUROPE?**

**NOW...**

**because historical experience shows  
that we are at the appropriate juncture  
for shaping the future**

## FIVE TECHNOLOGICAL REVOLUTIONS IN 240 YEARS

1771

The 'Industrial Revolution' (machines, factories and canals)

1829

Age of Steam, Coal, Iron and Railways

1875

Age of Steel and Heavy Engineering (electrical, chemical, civil, naval)

1908

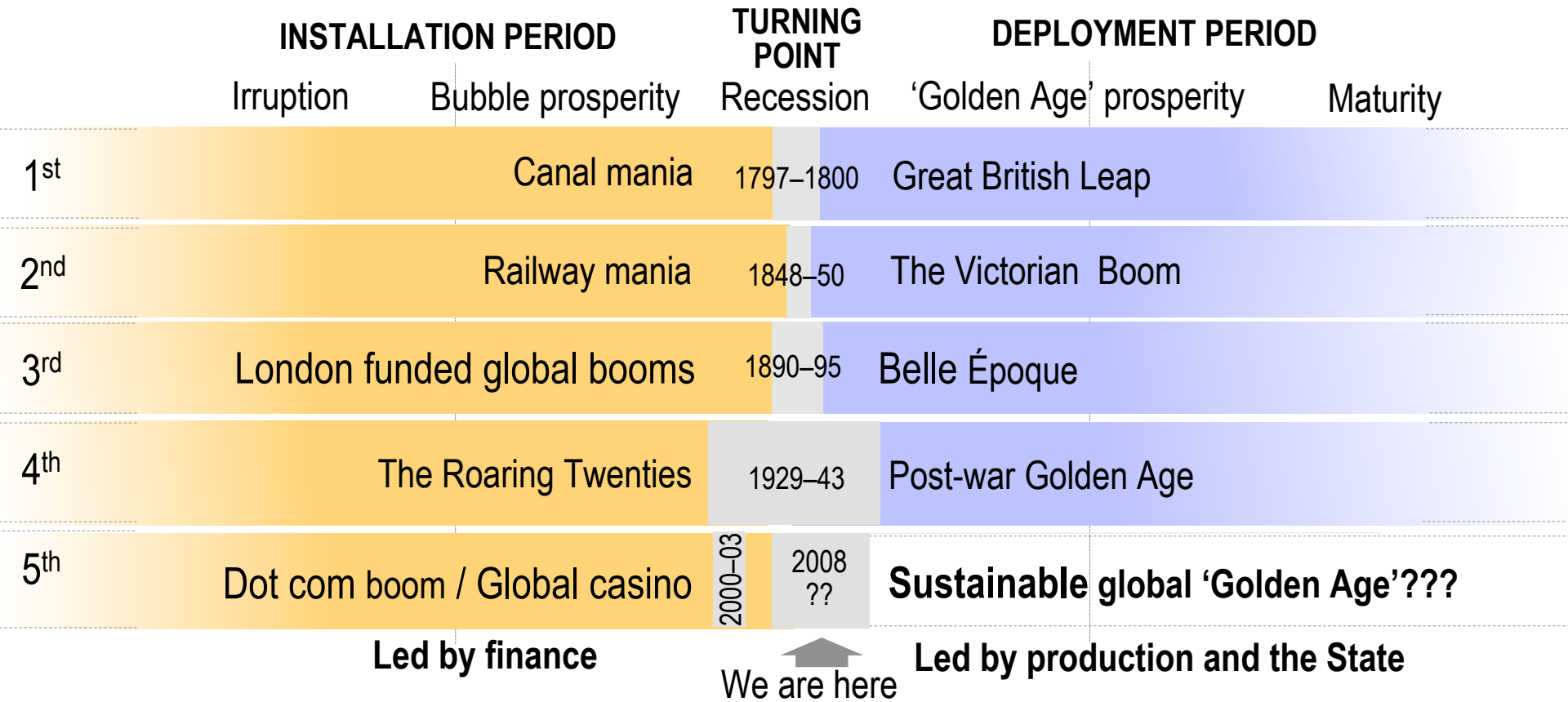
Age of the Automobile, Oil, Plastics and Mass Production

1971

Age of Information Technology and Telecommunications

**EACH BRINGS A TECHNO-ECONOMIC AND SOCIO-INSTITUTIONAL SHIFT**  
**with new directions for innovation and a potential leap in productivity**

# The historical record shows a regular pattern of propagation



**The adequate historical parallel for today is the 1930s**

# WHAT IS THE NATURE OF THE TURNING POINT?

As in the 1930s and now

Casino finance

Structural

Xenophobia

Low investment

unemployment

Economic migrations

Feeble growth

Deskilling

Talk of secular stagnation

Social unrest

Hopelessness

Recessions

Populist messianic leaders

Inequality

(even depression)

with a huge underlying technological potential which lacks a clear synergistic direction

**GOLDEN AGES RESULT FROM PROVIDING AN ADEQUATE DIRECTION  
TO ENABLE THE UNLEASHING OF THAT POTENTIAL ACROSS THE WHOLE ECONOMY**

**AND EACH GOLDEN AGE → INVOLVES A LIFESTYLE CHANGE  
which becomes the aspirational 'good life'**

- URBAN Victorian living from 1850s in England
- COSMOPOLITAN Belle Époque in Europe from 1890s
- SUBURBAN 'American Way of Life' from 1950s

**EACH LIFESTYLE CHANGE → NEW OPPORTUNITIES  
FOR INNOVATION, INVESTMENT AND JOBS**



## TWO FEATURES HAVE BEEN IMPORTANT IN UNLEASHING GOLDEN AGES

### The emergence of a new lifestyle

- Redefining the new aspirational 'good life' (generally initiated by the young, the richer and more educated)
- Signalling demand for complementary services and goods

### An active State redefining the playing field

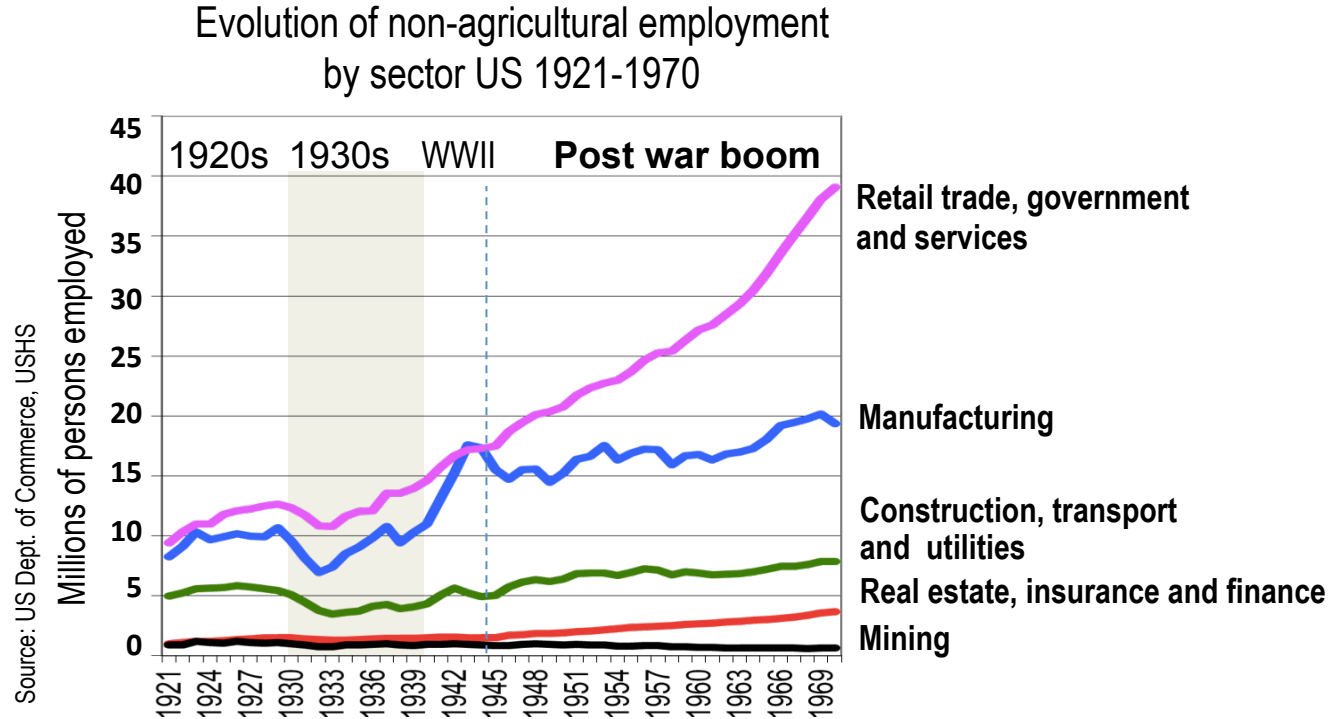
- Providing a direction for profitable innovation with the new potential (which finance sees as risky)
- Making demand available for the necessary production scales
- Reversing the inequality (at least some of it) for the sake of justice and/or for social peace

**BOTH DETERMINE THE LEVEL OF GROWTH AND JOB CREATION**

# THE PROLIFERATION OF JOBS TO SERVE THE NEW LIFESTYLES IS TYPICAL OF GOLDEN AGES

USA post war boom  
Manufacturing GDP x 2.5  
Manufacturing jobs + 30%

Total employment x 3



Hi-tech provides the best jobs and the productivity and wealth to pay for the rest

As long as there is a CLEAR DIRECTION for innovation and investment and a fair SOCIAL COVENANT

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## WHAT IS 'GREEN GROWTH'?

**A constant increase in the proportion of intangibles  
in GDP and in lifestyles  
by multiplying the productivity of resources  
and improving the quality of life of the great majorities**

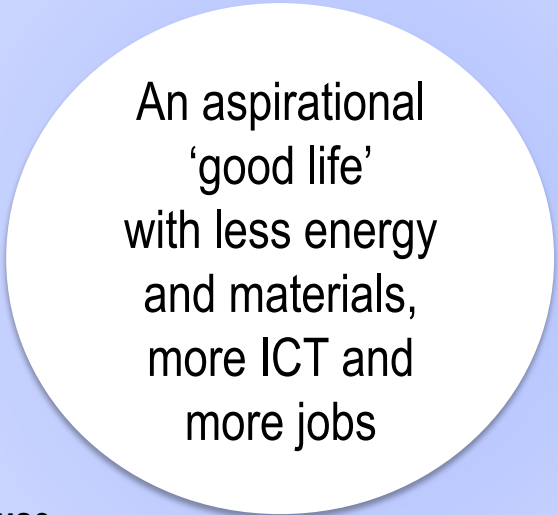
- Accent on care, preventive health, exercise, creativity and experiences
- Shifting to services rather than products
- Favouring renewables vs. fossil fuel energy
- Developing and using degradable biomaterials
- Drastic reduction of waste, massive increase in reuse and recycling
- Making durable products truly durable and shifting to a rental model
- Seriously reintroducing maintenance (with 3D printing of parts)
- And so on...

**SINCE THIS IS A NATURAL DIRECTION FOR INFORMATION TECHNOLOGIES  
WE CAN CALL IT 'SMART GREEN GROWTH'**

# THE TRANSFORMATION SPACES FOR THE SMART GREEN PRODUCTION AND LIFESTYLES

## HUMAN CENTRED SERVICES

Health and care  
Leisure and sports  
Entertainment  
Mobility & distribution  
Diversified electricity  
Education 'industry'  
The arts  
Intermediation  
Sharing and barter  
Conservation  
Logistics  
Maintenance  
Resource recovery, recycling, reuse  
Pollution reduction  
And so on



An aspirational  
'good life'  
with less energy  
and materials,  
more ICT and  
more jobs

## MODERNISATION OF PRODUCTION

Circular economy  
Truly durable products  
3-D printing  
Rental model  
Nanotechnology  
Renewable energy  
Batteries & carbon capture  
Sustainable architecture  
New construction methods  
Bio-plastics & custom materials  
FTTH and Wi-Fi infrastructure  
Smart electrical grid  
Complex systems engineering  
Hydroponics and urban agriculture  
and so on

**Massive innovation and massive employment, next to robotics and AI  
in sustainable activities, enhanced and enabled by ICT**

**THE SMART GREEN SHIFT IN LIFESTYLE HAS BEGUN (AS ALWAYS)  
AMONG THE YOUNG AND AT THE TOP OF THE INCOME AND EDUCATION SCALE**

- Natural vs. synthetic
- Minimalist design
- ‘Gourmet’ and organic food (unprocessed)
- Exercise for well being
- Small vs. big
- Multipurpose products
- Working from home
- Solar power and electric cars
- Intense Internet use
- Low carbon footprint
- Durability
- High quality vs. quantity
- Reparability and upgradability
- Anti-waste, pro-recycling
- Customised vs. standard
- Services vs. tangible products
- Active & creative “prosumer” vs. passive consumer
- Sustainably sourced products
- Fair trade and social responsibility
- Etc. etc.

**It does not spread by guilt or fear but by desire and aspiration**

**FURTHER SPREAD DEPENDS ON COST AND MARKETING STRATEGIES, WHICH DEPEND ON PROFITABILITY,  
WHICH, IN TURN, DEPENDS ON THE POLICY CONTEXT**

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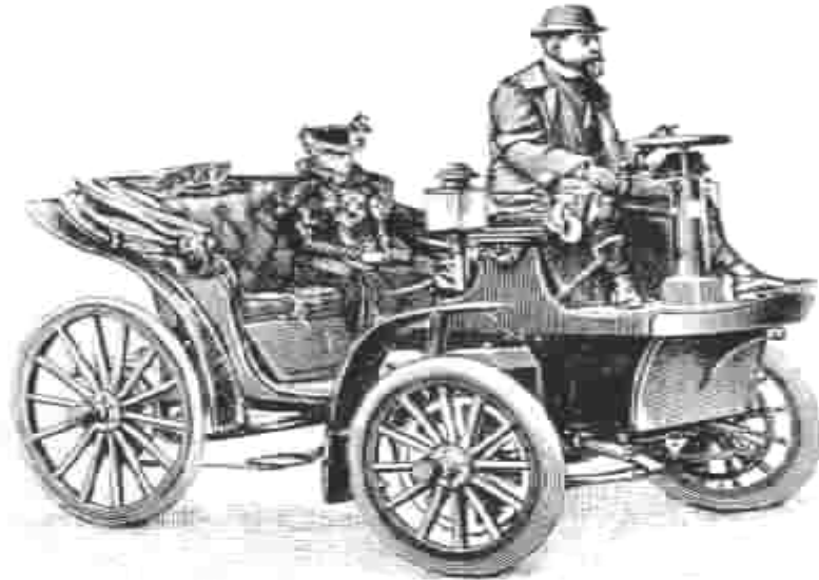
# THE NEW PRODUCTION AND LIFESTYLES ARE ONLY SLOWLY EMERGING

## WHY?

Because each new paradigm must at first be still wrapped in the old

And because relative prices of energy and labour still favour the American Way of life

Early automobiles looked like horse-driven carriages



One of the early automobiles 1898

Reproduction: L. De Vries. 1972

Consumers and businesses will respond if and when the context is changed by intelligent policies



**EUROPE IS LESS COMMITTED TO THE AMERICAN WAY OF LIFE**

**IT IS IN NEED OF A COMPETITIVE AREA OF SPECIALISATION  
TO SUCCEED IN THE GLOBAL ECONOMY**

**The smart green lifestyle is already being defined and adopted  
by many, especially in the Nordic countries**

**And so are the production methods**

**WHAT IS NEEDED IS THE SYSTEMIC ALIGNMENT OF THE POLICIES**

**The playing field needs to be tilted towards sustainability  
to achieve the necessary synergies  
in suppliers, skills, services and... in dynamic demand**

## **The alignment requires, at least:**

- Participatory and consensual policy formulation (government, business and society)
- Coherent and convergent regulation and fiscal policies
- Empowering local governments for synergistic action in a smart green direction
- Commitment of public funds at all levels for green-related R&D, infrastructure and investment, giving signals to encourage private funds
- Updating engineering and technical skills policy, emphasising sustainability

**AND MAKING ECONOMIC POLICY ACROSS THE BOARD  
BECOME SMART GREEN INNOVATION POLICY**

# EUROPE CAN BECOME THE TEST BED FOR SMART GREEN INNOVATION...



=

Healthy

Safe

Environmentally friendly

Sustainable (reusable, recyclable)

Best tech (high or low)

Best value

Advanced production standards

A sign of good living

And the same with engineering, education and other services for development

**...AND THE NORDIC COUNTRIES CAN FORGE AHEAD**

**The 'American way of life'  
defined prosperity  
for the 20<sup>th</sup> century**

**THE 'EUROPEAN WAY OF LIFE'  
CAN DEFINE PROSPERITY  
FOR THE 21<sup>ST</sup> CENTURY  
and export it to the world**

# THANK YOU!

For more about all this:

[www.carlotaperez.org](http://www.carlotaperez.org)

<http://beyondthetechrevolution.com>

<https://twitter.com/CarlotaPrzPerez>