



The world is at a crossroads: IT IS TIME FOR UNDERSTANDING INSTITUTIONAL INNOVATION

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- **Chris Freeman as pioneer and the SPRU tradition**
- **Giving a historical reason for the success of early SPRU**
- **Could understanding institutional innovation be a new pioneering opportunity for SPRU?**

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Chris Freeman and the SPRU tradition

CHRIS AS 'ENTREPRENEURIAL' FIRST MOVER

1962: Frascati Manual – Pioneering R&D statistics in the OECD

1966: Creating the SCIENCE POLICY RESEARCH UNIT, a pioneer in the field

1971: Founding RESEARCH POLICY: a pioneering Journal in the area

1974: *The Economics of Industrial Innovation* (Penguin) first textbook on the topic (updated and expanded 1997, in collaboration with Luc Soete)

And Chris continued producing groundbreaking research for more than thirty years



See Fagerberg, Jan, Morten Fosaas, Martin Bell and Ben Martin (2011)
'Christopher Freeman Social Science Entrepreneur,' *Research policy* 40(7):897-916

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SPRU WAS A VERY EXCITING PLACE DOING MAJOR RESEARCH PROJECTS

SAPPHO:

Identifying factors of success and failure in industrial innovation

Analysing 43 pairs of attempts in chemicals, scientific instruments and engineering equipment

Doing direct interviews in companies

STAFF:

A long-term project on social and technological forecasting, developing a methodology

IFIAS:

International project, with MERIT and IKE, about the sources of technical change and its diffusion

TEMPO:

About the consequences of technical change on employment

focusing on the new electronics and the previous synthetic materials

**ALL IN FREQUENT CONTACT WITH BUSINESSES AND GOVERNMENTS
ACROSS THE WORLD – TO MAXIMISE LEARNING AND INFLUENCE**

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AND THE VARIOUS RESEARCHERS MADE IMPORTANT CONTRIBUTIONS TO INNOVATION POLICY THEORY

Keith Pavitt	Created a taxonomy of innovations
Luc Soete	Broke ground on technological diffusion suggesting the possibility of leapfrogging and went on to create MERIT a sister research centre in Maastricht
Giovanni Dosi	Began by identifying technological trajectories in his PhD and went on to strengthening evolutionary economics
Martin Bell	Studied technological learning inside the firm (actually going 'inside')
Ben Martin and John Irvine	Developed a methodology for assessing scientific research
Chris Freeman	Developed the concepts of innovation systems, national systems of innovation, contributed to the understanding of technological revolutions and much more

And many many other researchers contributed theoretical insights across the whole field

AND IT ALL OBTAINED RECOGNITION FOR SPRU AS A LEADER IN THE AREA

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SPRU BECAME THE TOP RESEARCH CENTRE IN THE PRODUCTION OF CORE KNOWLEDGE IN THE FIELD OF INNOVATION STUDIES

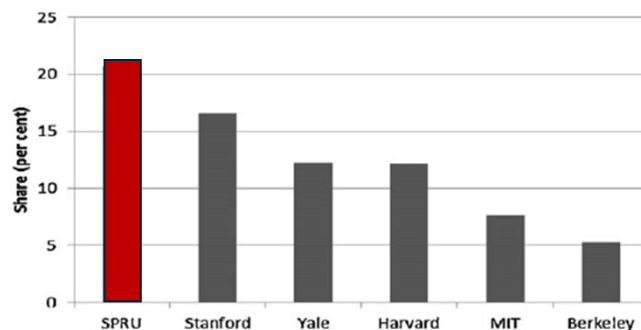


Fig. 1. Innovation studies: share of leading research institutions (percent) in the production of core knowledge in the field, 1970–1989.
Source: Fagerberg et al. (2011).

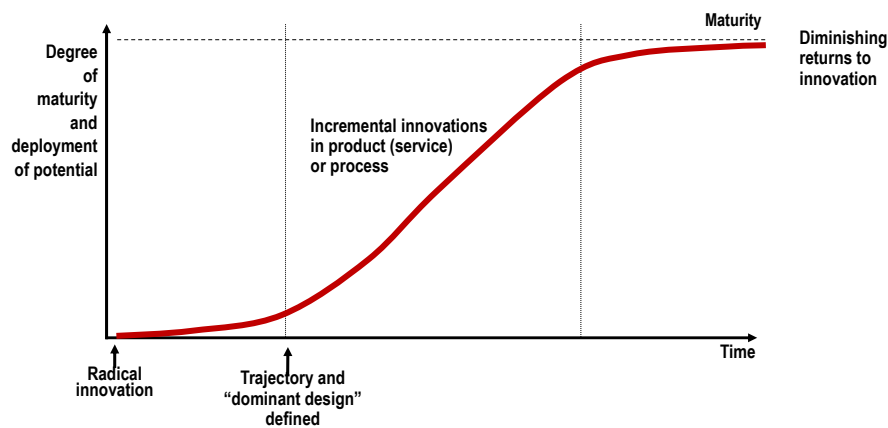
AND IT WAS SEEN AS A BEACON BY POLICY MAKERS ACROSS THE WORLD

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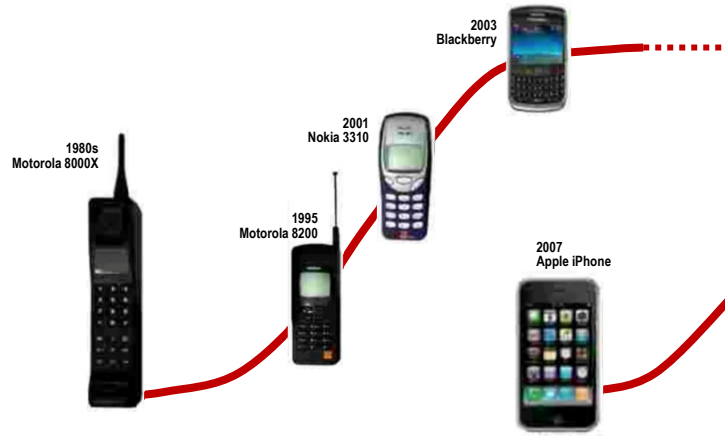
You all know about S-curve technological trajectories from radical innovation to maturity and exhaustion



Source: Based on Nelson and Winter, Dosi, Wolf, Abernathy and Utterback, Arthur, etc.

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From the heavy single purpose mobile phone through the little Nokia to the Blackberry
 Leading to a new start with the multi-purpose iPhone



Source of images: <http://slickzine.com/design/the-evolution-of-mobile-phone-design-history1980-to-2012/>
 downloaded 16/01/2014 and BlackBerry | Definition, History, & Facts | Britannica.

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THE SAME HAPPENS WITH WHOLE TECHNOLOGICAL REVOLUTIONS

The 'improvements' in that case are whole technology systems
 (as Chris well explained)

FOR THE PREVIOUS MASS PRODUCTION REVOLUTION:

Moving assembly line/ the car and electrical appliances/ plastics and,
 at the end, electric can openers and electric carving-knives,
 with saturated markets and no more productivity increases

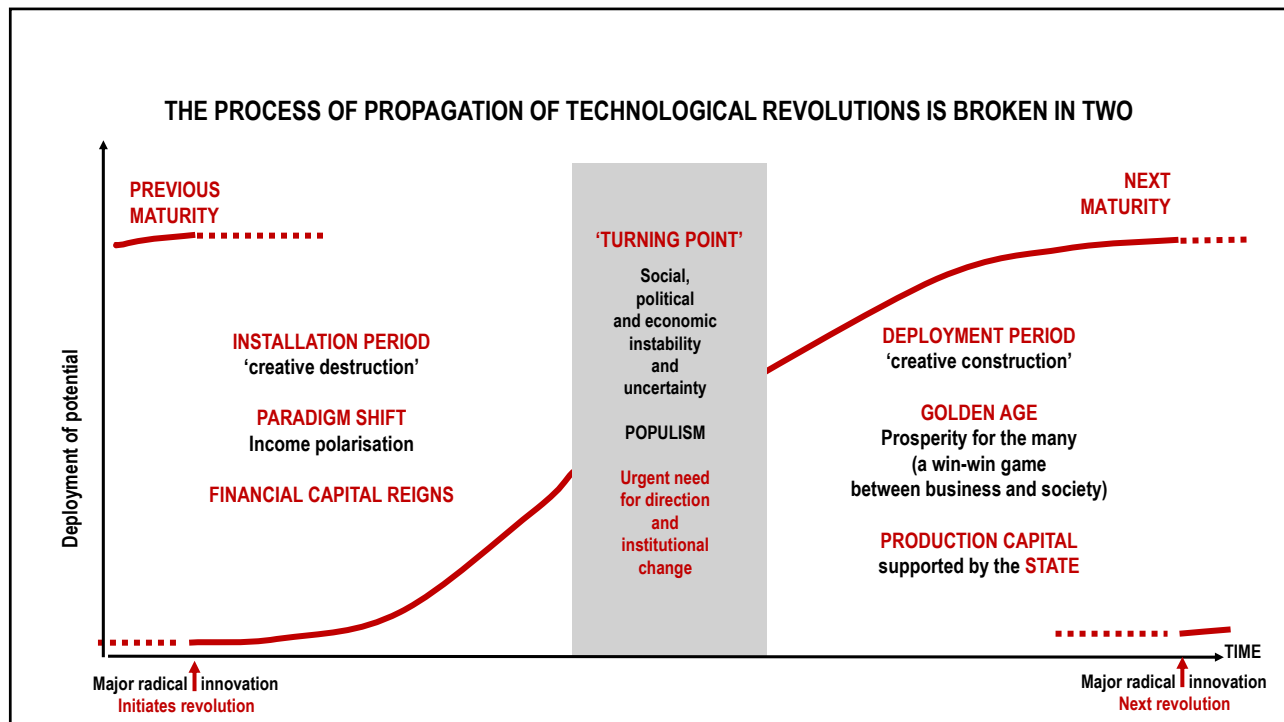
AND FOR THE CURRENT ICT REVOLUTION:

Microprocessors and computers/ Internet/ Artificial intelligence and much more still to come

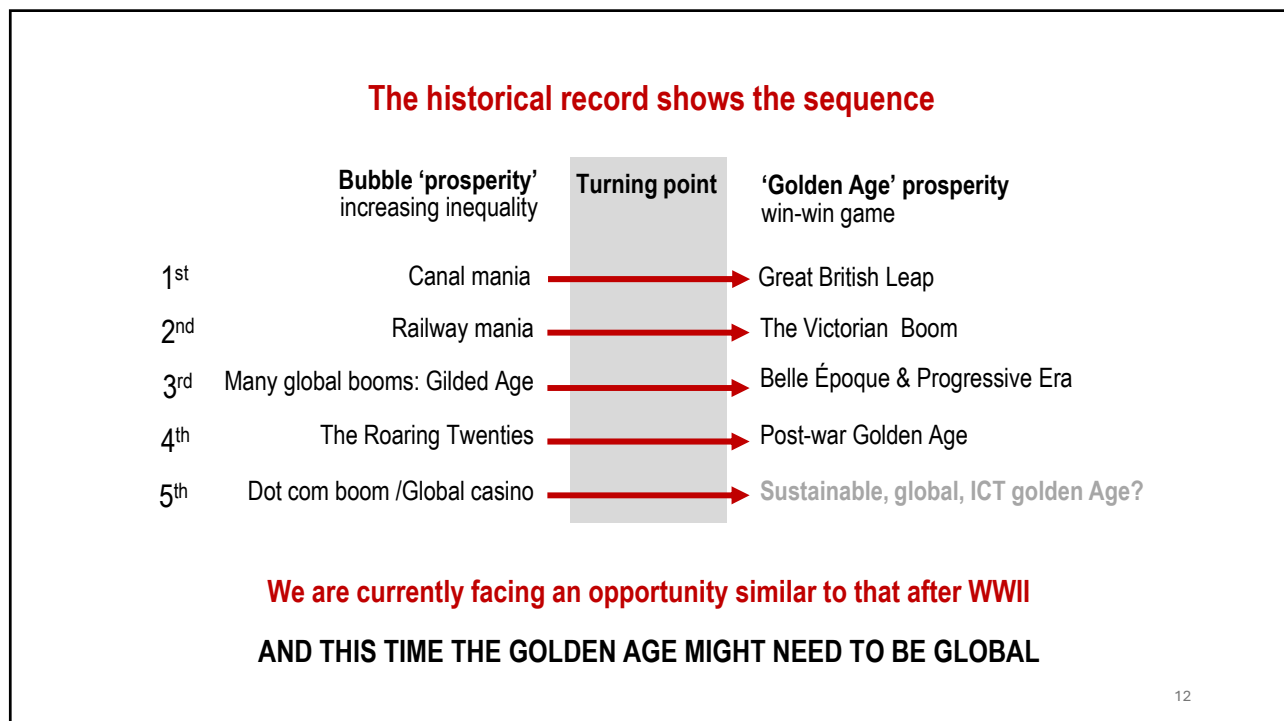
BUT THE S-CURVE OF REVOLUTIONS IS NOT UNINTERRUPTED

The propagation affects society deeply with major political consequences
 AND REQUIRES A NEW SOCIO-INSTITUTIONAL FRAMEWORK

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**BUT IF WE ARE TO HAVE A GOLDEN AGE,
THE OLD INSTITUTIONAL FRAMEWORK NEEDS A COMPLETE REVAMPING**

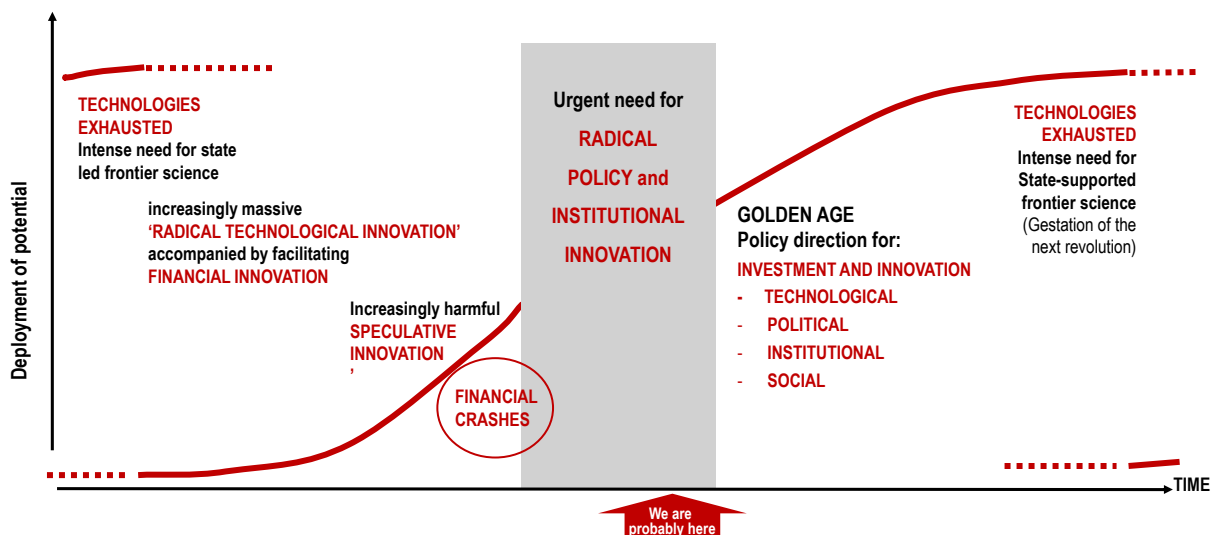
**As with the Welfare State and the Keynesian policies in each country,
and the IMF, the World Bank, the UN, etc., at the international level**

**The State, nationally and supranationally,
needs modernisation, precisely now**

AND WE ARE LATE!

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**The way in which technological revolutions propagate
CHANGES THE AREAS WHERE RESEARCH AND INNOVATION ARE REQUIRED**



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Chris and SPRU were there when
SCIENCE POLICY became a major issue
as the mass production revolution approached maturity

They were there when
INNOVATION AND TECHNICAL CHANGE
became a major issue as the information revolution began spreading

And they were also there when
TECHNOLOGY POLICY
became important and governments were searching for guidance

NOW IT IS THE STATE THAT NEEDS INNOVATION AND REDESIGN
Otherwise, the populists will take over
and the green transition will not happen on time

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YES, THE WORLD TODAY NEEDS MAJOR INSTITUTIONAL CHANGE

The innovation studies community has always been cross-disciplinary
SPRU connected economists, scientists, engineers, sociologists, historians, etc.

**We now need to collaborate with political scientists
TO ANALISE THE PROCESSES AND CONDITIONS FOR SUCCESS
IN POLICY AND INSTITUTIONAL INNOVATION**

Whether for the green transition
or for renovating the Welfare State to face the new conditions
or for the Global South to negotiate with East and West for development
or for the required supranational institutions

UNDERSTANDING POLICY INNOVATION IS IN ORDER

COULD SPRU STEP UP TO THE CHALLENGE?