If MBriefing Day 14 May 2015

Industrial strategies for national, regional and local policymakers

Dr Carlos Lopez Gomez Dr Eoin O'Sullivan Centre for Science, Technology & Innovation Policy, IfM

If MANAGEMENT TECHNOLOGY POLICY



Overview

Introduction to CSTI

CSTI's approach

Examples of recent work for government agencies

International activities

Recent industrial strategy project in Mexico

If MANAGEMENT TECHNOLOGY POLICY

Research themes





Industrial

Sustainability



Industrial Photonics



Inkjet Research





International Manufacturing



Strategy and

Performance

Technology Enterprise



Management

Science, Technology & Innovation Policy

A unique environment for manufacturing, technology & industrial policy research

Technology

Centre for Science, Technology & Innovation Policy An engineering contribution to STI policy

"What makes some national innovation systems more effective than others at translating science & engineering research knowledge into new technologies, industries & economic wealth?"

> Science Technology Innovation Policy



Centre for Science, Technology & Innovation Policy An engineering contribution to STI policy

Policy

- More careful characterisation of technologies, manufacturing systems, industrial structures (and their linkages)
- More careful characterisation of technology readiness cycles, technology transitions & industrial change

EPSRC

Research Council

Encineering and Physical Sciences

BIS

Department for Busines

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Advanced materials	Country / region	Sector	Technology	Innovation challenge
UKAerospaceAerospace compositesInnovation Cent (cf. Catapults)VietnamSoftwareSynthetic biologyTechnology emergence (inc. 	UK Vietnam Mexico (Yucatan) UNIDO	Aerospace Software Agri-food Medical devices	Advanced materialsAerospace compositesSynthetic biologyQuantum technologiesAdditive ManufacturingRegenerative modicino	Technology & Innovation Centres (cf. Catapults) Technology emergence (inc. standards) Manufacturing in high-wage economies Universities & growth





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CSTI's approach

CSTI Approach

ANALYSIS STRATEGY



Critical questions for

Adapted from López-Gómez, C., O'Sullivan, E., Gregory, M., Fleury, A., & Gomes, L. (2012). *Emerging Trends in Global Manufacturing Industries and Implications for Latin America*. Report to UNIDO.

CSTI Approach



Industrial policy as a dynamic process

Critical questions for industrial strategy

How to ensure evidence is comprehensive & timely?

How to ensure transparency & inclusiveness?

Where/when might there be a role for government?

CSTI Approach

Complexity of innovation systems



Adapted from Markard and Truffer (2008)

Variety of 'units of analysis'

- Need to deploy various research tools
- Economic analysis
- Surveys
- Interviews
- Workshops
- Etc.





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International Manufacturing Policy Workshops, Studies and Resources

Centre for Science, Technology & Innovation Policy International Comparative Policy Activities



Centre for Science, Technology & Innovation Policy International Comparative Policy Activities



Towards a New Industrial Structure Vision? Issues on Japan's Industrial Policy IfM | 18 November 2014



What is New in the New Industrial Policy? Eoin O'Sullivan and Carlos López-Gómez, Centre for Science, Technology & Innovation Policy (CSTI), University of Cambridge

JAPAN SESSION ONE:

Recent Industrial Policies in Japan Yuki Sadamitsu, Japan External Trade Organization (JETRO) London

JAPAN SESSION TWO:

Japan's Industrial Structure – Beyond Keiretsu? Mari Sako and Steve New, Saïd Business School, University of Oxford

JAPAN SESSION THREE:

Japan's Institutional Infrastructure – Is METI Alone? Dr Hiro Izushi, Aston Business School, Aston University

UK-Japan Workshop Manufacturing & Industrial Policy (2014)



Workshop aims:

- Identify cooperation opportunities in development of high value manufacturing
- Share processes and findings concerning manufacturing futures
- Gain mutual understanding of national manufacturing policy landscapes
- Develop frameworks to enable continuing dialogue between UK and Japan



UK-US Workshop

Manufacturing & Innovation Policy (March 2015)



UK Science & Innovation Network Focused on advanced manufacturing innovation institutes, in particular, the recently formed:

- UK High Value Manufacturing 'Catapult'
- US National Network for Manufacturing Innovation



UK-Germany Workshop

Manufacturing & Innovation Policy (Sept 2015)



Overview

- Berlin, September 2015
- 'Paired' national institutions
- Sharing of lessons learned & best practices
- "Industry 4.0"



International Benchmarking Studies Manufacturing Foresight and R&D Priorities



International Benchmarking Studies Emerging Technology Policies & Programmes



International Benchmarking *Manufacturing Policy* **Portal**



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Manufacturing Policy Portal

Hosted by the Centre for Science, Technology & Innovation Policy (CSTI)

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Policy Database Manufacturing Policies	2014 Innovationen für die Produktion, Programme strategy Dienstleistung und Arbeit von morgen	BMBF
Manufacturing Futures	2014 Industrie 4.0 - Smart Manufacturing for Positioning document the Future	GTAI
Resources	2014 Germanys Leading-Edge Clusters Programme strategy	BMBF
	2014 Challenges for a Modern Industrial Positioning statement Policy	BMBF
	2013 Recommendations for implementing Expert working group the strategic initiative INDUSTRIE 4.0 recommendations	Industrie 4.0 Working Group



www.manufacturing-policy.eng.cam.ac.uk/





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Yucatan Project

Collaborative Project to Support Yucatan's Industrial Development Strategy

GOVERNMENT OF THE STATE OF YUCATAN IfM | UNIVERSITY OF CAMBRIDGE

PROJECT REPORT | MARCH 2015







AGREED TASKS FOR THE PROJECT

- 1 Articulate an **industrial development vision** for Yucatan
- 2 Undertake a critical evaluation of Yucatan's **industrial capabilities**
- 3 Identify strategic opportunities perceived by stakeholders in Yucatan
- 4 Devise <u>action plans</u> to exploit perceived strategic opportunities
- 5 Identify mechanisms to promote **partnerships among key stakeholders**











Industrial Pact for Yucatan



Basis for an INDUSTRIAL PACT



