Penang as a knowledge hub

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Abstract

Malaysian development strategies since independence, again in the 10th Malaysia Plan 2010 have emphasized the development of industrial clusters, like the Penang free trade zone and the MSC. Malaysia has two strong knowledge clusters: the Klang valley with KL and the MSC, Penang State and a number of smaller clusters. A calculation of the density of knowledge institutions and knowledge personnel show the epistemic landscape of Malaysia. A preliminary study of Penang reveals that the epistemic landscape is fragmented. There are several areas with a high density of knowledge institutions and knowledge workers, which however do not necessarily overlap with industrial clusters. These imbalances need to be corrected to ensure a safe passage towards a knowledge-based economy and society.

Keywords: Malaysia; Penang; knowledge clusters; knowledge economy; development strategy

1. Cluster development

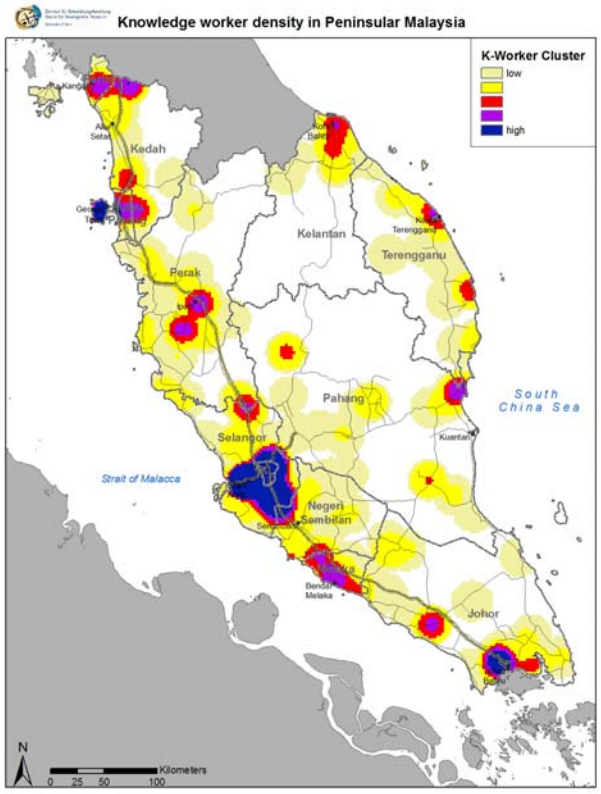
Studies have shown that industrial clusters enhance the competitive advantage of states or regions. Clustering of related industries reduces transaction costs, stimulates innovations and drives development. Silicon Valley in California or the automotive cluster of Stuttgart, Germany are examples of successful clusters. The Japanese Government as well as European Commission facilitate the growth of industrial clusters and research on their development.

Malaysian development strategies since independence, again in the 10th Malaysia Plan 2010 have emphasized the development of industrial clusters, like the Penang free trade zone and the MSC. In recent years the following problems have surfaced

1. The earlier competitive advantage of industrial clusters has been eroded by the growth of other centres within and outside Malaysia

2. The internal structure of industrial clusters did not develop an optimal diversity of firms and institutions
3. The external communications and the internal exchange of goods, services and knowledge was not optimized
4. Government cluster initiatives required high inputs and did not regard natural cluster developments.

These problems are clearly related to the transformation from an industrial to a KBE (knowledge-base economy and society). Instead of, or in addition to industrial clusters new knowledge clusters are necessary to maintain the competitive advantage of states and regions. The increasing input of knowledge into production and the production and acquisition of new knowledge will create a new „epistemic landscape“ with a new architecture of knowledge production and innovation. Such an epistemic landscape consists of



- ❖ a concentration of knowledge workers and highly-educated manpower,
- ❖ institutions of higher learning and research
- ❖ companies with strong R&D
- ❖ an ICT backbone

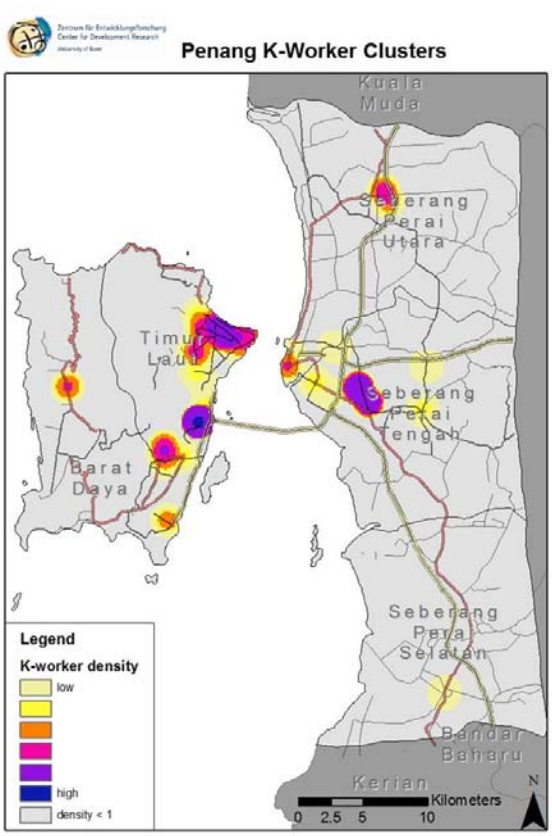
2. Malaysia and Penang

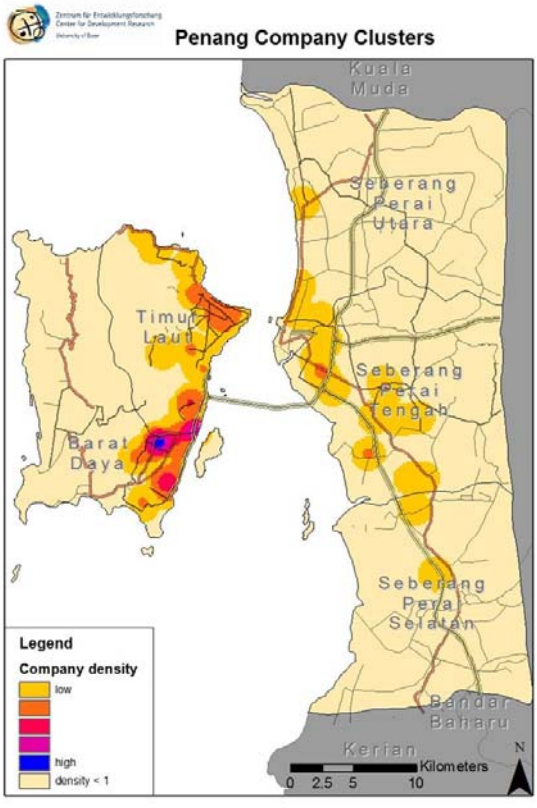
Malaysia has two strong knowledge clusters: the Klang valley with KL and the MSC, Penang State and a number of smaller clusters. A calculation of the density of knowledge institutions and knowledge personnel show the epistemic landscape of Malaysia (see map). Penang has the potential to change from an industrial cluster to

a knowledge cluster. For this purpose ***Penang has to reinvent itself as a „knowledge hub“.***

A preliminary study of Penang reveals that the epistemic landscape is fragmented. There are several areas with a high density of knowledge institutions and knowledge workers, which however do not necessarily overlap with industrial clusters. A number of further issues need to be clarified.

1. To what degree is knowledge transferred and shared between universities, research institutions, non-governmental institutes, industry and the government?
2. How far is local knowledge integrated into knowledge producing and disseminating institutions?
3. Are there knowledge hubs of specialised expertise?





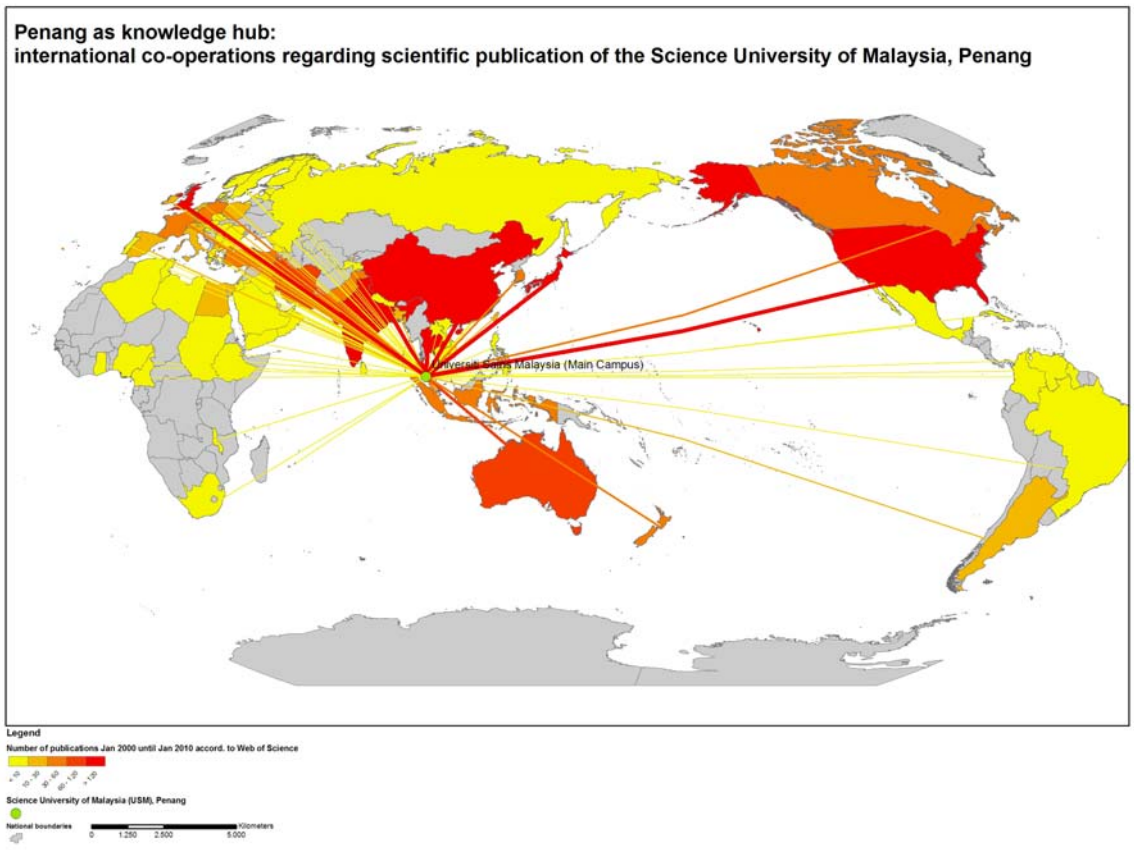
4. Knowledge Cluster Strategy

There are insufficient data on knowledge exchange both within and outside Penang, but it can be assumed that there is room for improvement. The so-called „triple helix“

of research institutes, government and industry needs to be strengthened. Our maps show that clusters of knowledge workers and high-tech companies do not completely overlap. This can be taken as an indicator that industrial companies are short of knowledge workers.

USM as an APEX university has impressive research capabilities and has improved its international cooperation considerably (see map), but it should be investigated how far this potential is utilized to support industrial R&D, NGOs and government agencies.

Penang can develop and integrate its knowledge clusters further and advertise its position as one of the major knowledge hubs in Malaysia and the ASEAN region. The existence of knowledge hubs are incentives for investment and attract capital and high level manpower.



5. Definitions

Knowledge clusters *are agglomerations of organizations that are production-oriented. Their production is primarily directed to knowledge as output or input. Knowledge clusters have the organizational capability to drive innovations and create new industries. They are central*

places within an epistemic landscape, i.e. in a wider structure of knowledge production and dissemination. Examples for organizations in knowledge clusters are universities and colleges, research institutions, think tanks, government research agencies and knowledge-intensive firms.

***Knowledge hubs** are local innovation systems that are nodes in networks of knowledge production and knowledge sharing. They are characterized by high connectedness and high internal and external networking and knowledge sharing capabilities. As meeting points of communities of knowledge and interest, knowledge hubs fulfil three major functions: to generate knowledge, to transfer knowledge to sites of application; and to transmit knowledge to other people through education and training.*

(Evers, Hans-Dieter, Solvay Gerke, and Thomas Menkhoff. "Knowledge Clusters and Knowledge Hubs: Designing Epistemic Landscapes for Development." *Journal of Knowledge Management* 14, 2010)

Note

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