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AGRICULTURE • INNOVATION • LIFE

Industry Cluster Initiative
A Proposed Model for Malaysian M&E Industry

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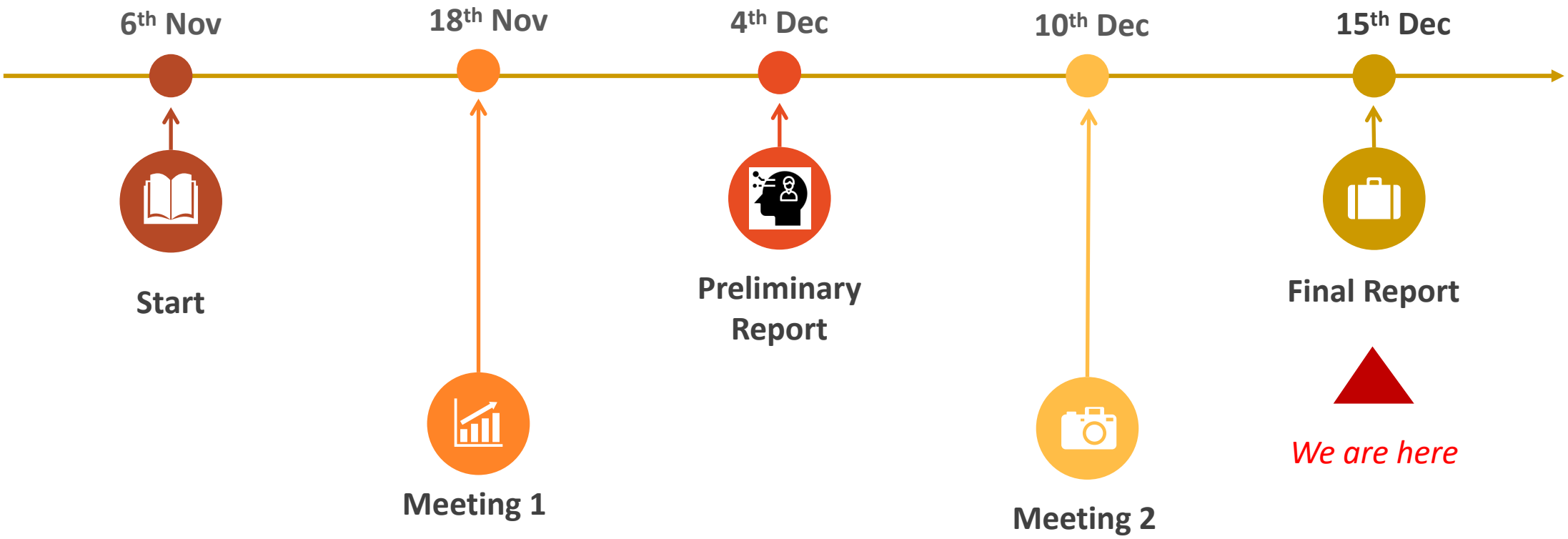
Timbalan Pengarah

Milestones – Industry Cluster



Literature Review – Industry Cluster

Theories

- Classical Agglomeration Theory
- Competitiveness
- New Economic geography
- Dynamic Externalities
- Flexible Specialisation
- Sharing Economy
- Regional Innovation Systems

Classical Agglomeration Theory

Marshall (1890); Weber (1929); Ohlin (1933); Hoover (1937)

Concept

- Refers to the **spatial concentration of people and economic activities.**
- **External economies of scale** resulting from increase in productivity of an entire industry, region, or economy due to factors outside of an individual company.
- (Marshall, 1920)- **Urbanisation** (size of location leads to an increase in productivity, with no single dominant industry) vs. **Localisation** (increase in industry size in a location leads to an increase in productivity of a particular activity).

Key points

- Agglomeration advantages arise from three sets of localisation economies:
  - ✓ pooled market for **workers** with specialised skills
  - ✓ availability of specialised **inputs** and services
  - ✓ **technological** spillovers
- In some cases agglomeration may result from **"natural advantages"** such as climatic and topographic suitability.
- **Growth pole policy**- focused investment at a limited locations to encourage economic activity (Perroux 1950) through system of linkages and interdependences among industries.

New Economic Geography

Krugman (1991); Venables (1996); Fujita & Thisse (2002)

Concept

- Recapitulates early agglomeration theory in its focus on spatial externalities as key drivers of the geographic concentration of industry (Krugman 1991).
- **Observed spatial configuration** of economic activities is the results of **two opposing forces:** agglomerating (centripetal) forces and dispersion (centrifugal) forces.
- **Centripetal forces** are externalities that lead to the clustering of economic activities, including labour market pooling, technological spillovers, immediate goods supply, and market size.
- **Centrifugal forces** are problems that develop with increased concentration, such as increased land rents, congestions and environmental issues.

Key points

- The focus on agglomeration is on market, technological and other externalities.
- **Transportation costs**, **labor (im)mobility** and the relative size of pecuniary externalities **(market size effects**) are key determinants of regional distribution of income and wealth.
- The lower the transport cost and the more pecuniary externalities and labor mobility, the more the forces of spatial agglomeration will prevail(Krugman and Venables 1996, Martin 1999).
- Leads to introduction of models involving monopolistic competition and increasing returns.

Flexible Specialisation

Brusco (1982); Piore & Sable (1984); Scott (1988); Storper)1995)

Concept

- Refers to the externalisation of production processes and subcontracting relations to **smaller, specialised, specialized, and flexible** firms (Brusco 1982).
- Characterised by smaller scale production, specialisation, more cooperation and social networking between contracting firms to make vertically-disintegrated production possible.
- A more comprehensive analysis that goes **beyond tangible flows and embeds the economic** within the social and the cultural environment (Martin and Sunley 1996).
- The important **role played by social and cultural networks** in providing competitive advantage to small and medium-sized firms.

Key points

- From economies of scale to flexible form of industrial organisation
- **Untraded interdependencies.**
  - Embedding the economic within the social.
  - Formal and informal collaborative and informational networks, interactions, and shared customs and rules for developing communications and knowledge.
- **Strong presence of social networks,** inter-personal relations, face-to-face encounters, **casual or tacit information flows** and culture (norms of **trust** and **reciprocity**) among local actors as invaluable assets.

Regional Innovation Systems

Lundval (1992); Cooke & Morgan (1998); Malmberg & Maskell (2002)

Concept

- Key resources for competitiveness in today's global economy are localized patterns of **knowledge creation, knowledge sharing, innovation, and learning.**
- Innovative performance of firms is determined by the **interaction of a network of actors** (firms & institutions) with the environment.
- Importance of **collective learning and networking**, extra-economic relations and local infrastructure as sources of competitive advantage in a knowledge-driven economy.
- Learning regions, **national and regional innovation systems.**

Key points

- New knowledge economy.
- Firms embedded in the **right environment** are considered to learn faster.
- Increasing emphasis is placed on **"tacit" knowledge** (information spillovers, and shared cultural, linguistic and social norms) rather than **codified knowledge** (standardized mass production or Fordism).
- **Innovation strongest where high levels of interaction occur,** demonstrating the importance of geographical proximity (Audretsch and Feldman 1996).

Competitiveness

Porter (1990)

Concept

- The **competitiveness of a nation or region** depends on the competitiveness of the industries and other companies forming the industry clusters.
- Regional clusters are considered as the s**ources of jobs, income, export growth,** and innovation.
- Competitive advantage is forged both through intensified interfirm rivalry and geographical proximity.
- Competitiveness of industry clusters is derived from **concentration of related industries, suppliers and service**s in the same place, access to supporting **economic infrastructure,** rivalry and collaborative efforts between firms and other institutions (Porter 1990, 2000).

Key points

- Capture **important linkages, complementarities, and spillovers** in terms of technology, skills, information, marketing, and consumer needs.
- Clusters and regional competitive advantage
  - Cooperation and rivalry
  - Partnerships with institutions
  - Regional resources and infrastructure

Dynamic Externalities

Romer (1986); Lucas (1988); Glaeser et al. (1992); Henderson et al. (1995)

Concept

- Role of **externalities associated with knowledge spillovers** (dynamic externalities) on local economic growth.
- Suggests that the size of the **stock of ideas,** the **quality of human capita**l, and the size of the labour force engaged in the production of ideas are key factors in innovation, hence economic growth.
- Through the endogenous growth theory (significant externality effects from education and research, knowledge accumulation, and geographical proximity in idea transmission) highlights the importance of localization economies in regional economic growth.

Key points

- Significant externality effects e.g. **education and research**, the role of knowledge accumulation, and the importance of geographical proximity in the transmission of ideas for the localised economies in regional economic growth.
- Ideas, education, research, and institutions.
- Knowledge spillovers are important at the **local level** (Maskell and Malmberg 1999), **international sharing** of knowledge within between firms (Breschi and Lissoni 2001).

Sharing Economy

Concept

- New business model is underpinned by **collaborative consumption concept** that is **coordinated by people** on the acquisition and distribution of resources for certain compensations (Belk, 2014).
- Leads to a new way of economic thinking, meaning that **things are preferably shared, borrowed and leased** instead of owned.
- Also includes independent performers, temporary workers, self-employed, half-time workers, free workers, and 'free agents'.
- **SMEs that are less competitive** compared to large sized organizations are facing difficulties in securing human resources, capital, and technology and therefore are **naturally reliant on intensive collaboration and integration** with business partners to counter their limitations.

Key points

- Possibility for cluster members (through its designated platform) to **interface with other cluster members** within and/on inter-cluster on the sharing (from excess capacity) on various aspects such as extra warehouse space, human resources, transportation, machinery, showcase gallery and such.
- This will enable **optimization of resources, flexibility, and cost reduction.**
- B2B Gig Economy.

Summary of Literature Review

- The **concept of industry cluster** has generated much discussion in theory and practice. Yet, it is fair to say that an accepted definition or a **unified theoretical framework has failed** to emerge.

- There are various theoretical propositions that seek to explain the clustering of economic activity and its **presumed link with regional economic development.**

- There is undoubtedly some **overlap on some of the explanations** offered by various theoretical perspectives.

- The concept of clustering has been used so widely in varying contexts and in a multifaceted manner that it risks creating more confusion than clarity, particularly in empirical research.

Hence, the working definition of industry cluster for the current study

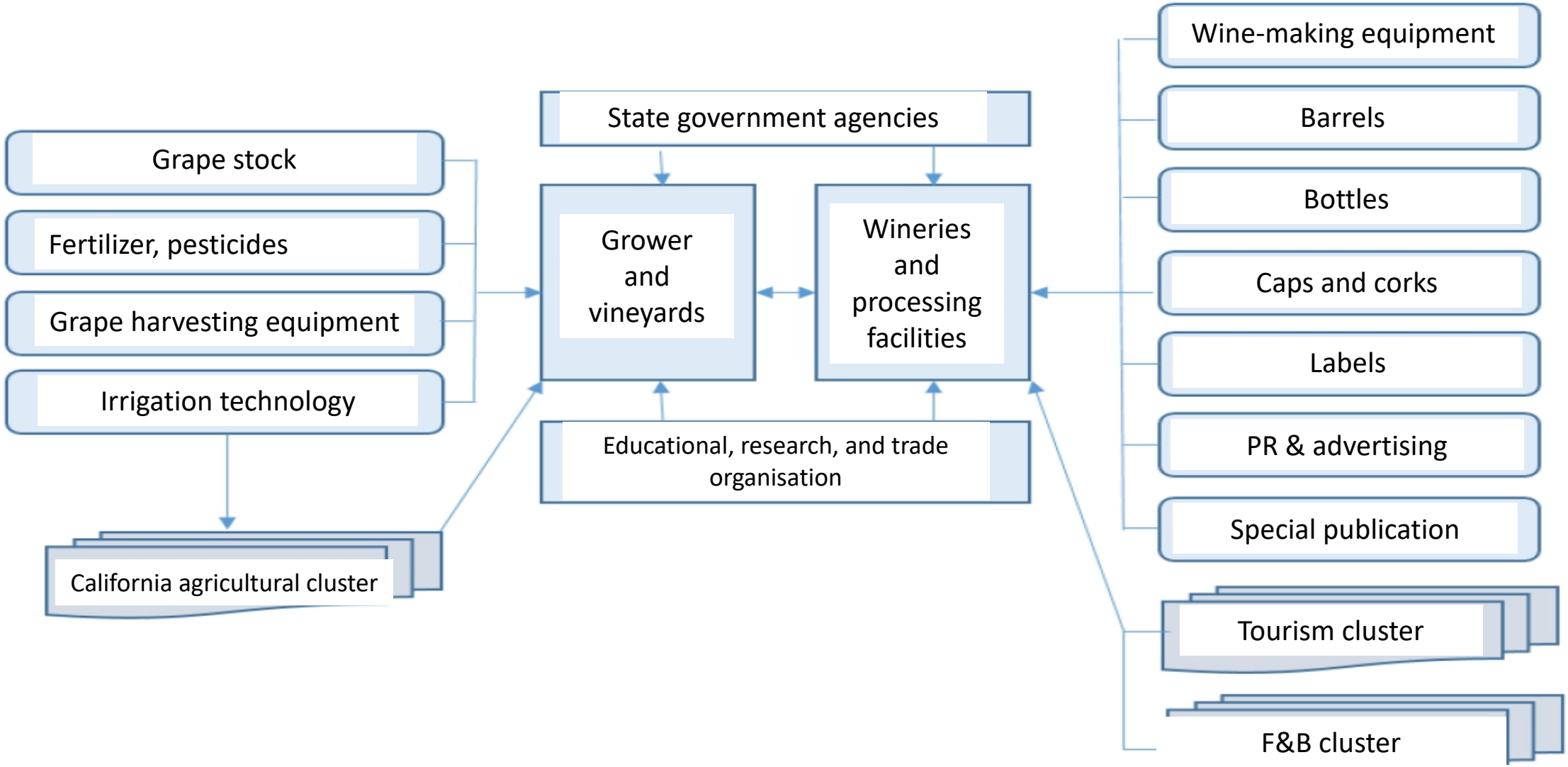
Concentration *of* ***related industries*** *and institutions with common aims, that enable the* ***creation of an ecosystem*** *which foster competition, cooperation, innovation, productivity and competitive advantage creation.*

Industry Cluster

Industrial clustering has been implemented in various countries and industries, albeit with some variations. Examples of industrial cluster in the US covering various geographical locations and industries.

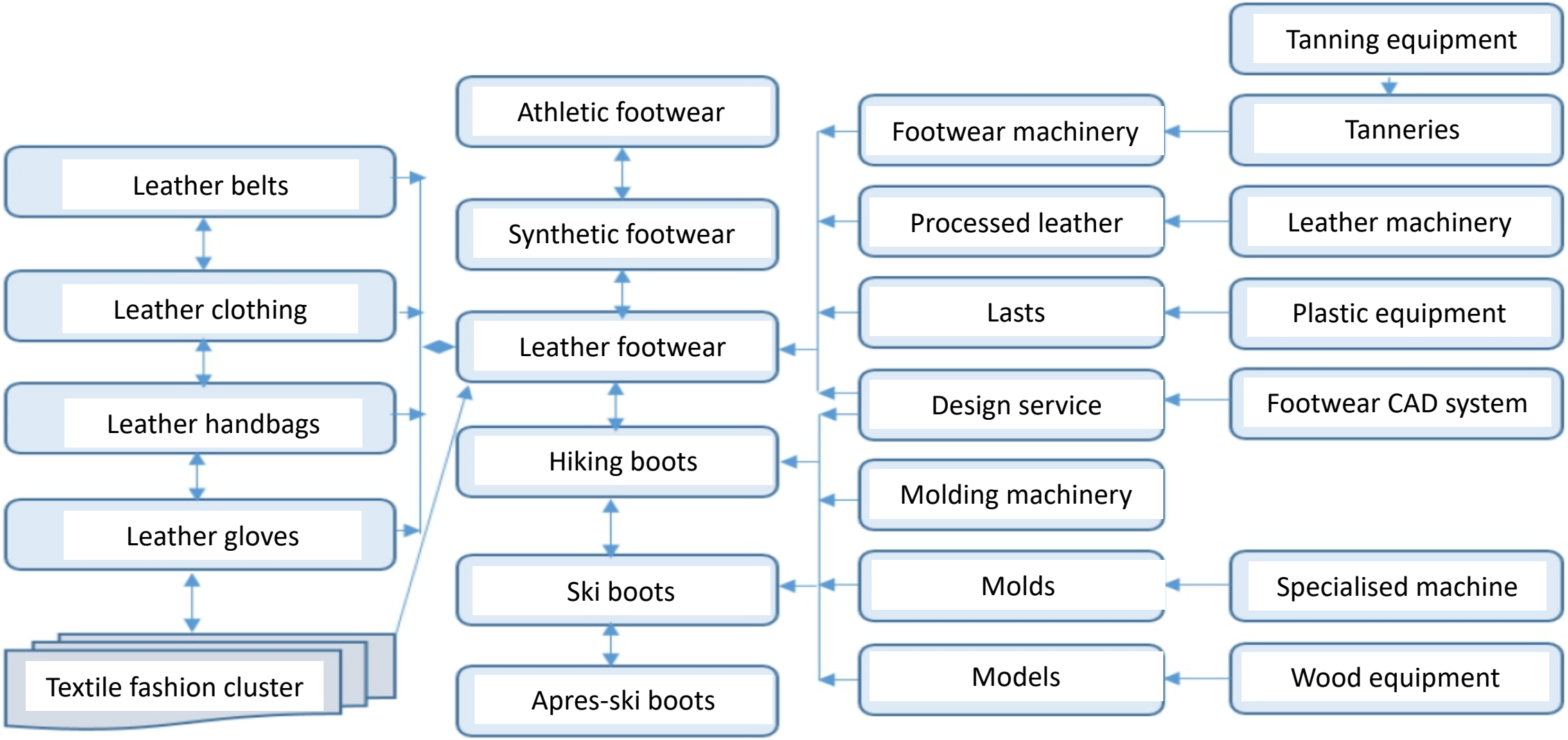
Source: Porter (1998)

California Wine Industry



Source: Porter (1998)

Italian Leather Fashion

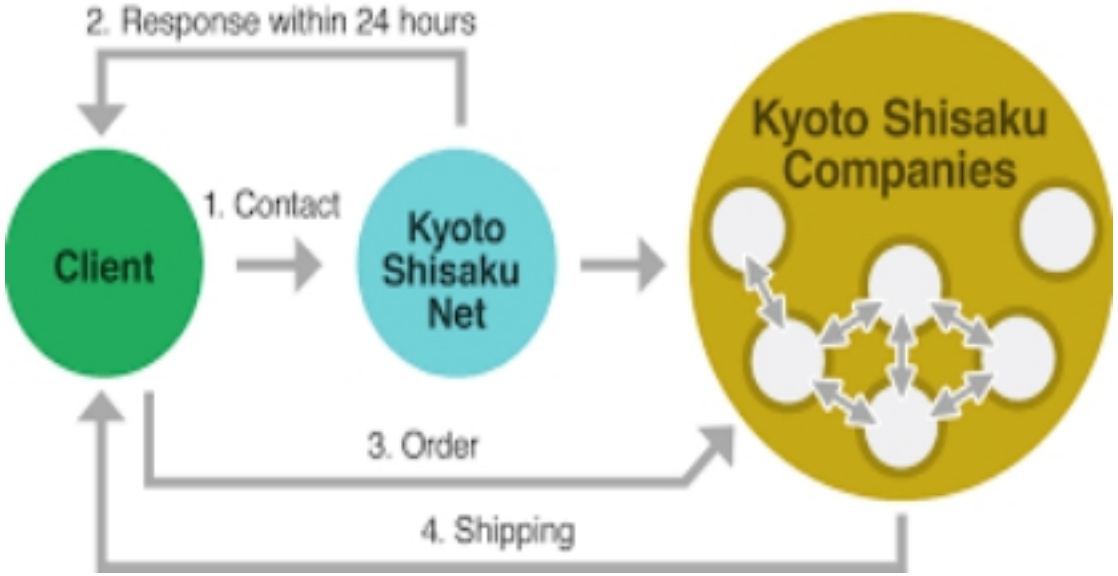


Source: Porter (1998)

4

Kyoto Shisaku Net, Japan

- In 2001, ten small machining and metal processing companies came together to form the **Kyoto Shisaku Net consortium, a collective hub for prototyping**.
- Currently have over **20 cluster member**s collaborating, coexisting, and cooperating.
- Provides comprehensive processing for a **wide range of equipment and systems development**, offering support for CAE analysis, sheet metals, plastics and resin, cutting, circuit boards, evaluation systems, etc.
- Competitive advantage based on its **ability through cluster membership to take on difficult and uncertain work that other companies refuse** forsuch reasons as "the specifications on this project are not finalized ,""there is no way to estimate the cost of this project," and "common sense tells us that is an impossible request".
- Total investments ¥243,000,000) (as of May 31st, 2016).



Members **experiment with various projects among themselves that they cannot handle alone.** Members share the costs, present proposals aggressively, and take efforts to win orders.

Source: https://kyoto-shisaku.com/en/about/

Net Key Activities.

Phase 1- Participating Phase

- Members must have understanding of what technologies they need to expand the businesses of their company.
- Need to see the Net as a place to explore possibilities to use their technologies in a variety of industries.
- Practice the “five percent rule,” through spending about five percent of profits and time on new projects.
- Possess a system of provisional membership when recruiting new members, to ensure that the purpose of membership is not diluted.
- Leveraging technologies to develop ability to propose suggestions based on flexible thought processes, allowing members to accept jobs that appear to be impossible.
- Minimal capital required for innovation as multiple companies work together in differentiation, leveraging on collective creativity and technologies

Phase 2- The Prototyping Process

- Order is received and the prototyping begins.
- Employee awareness and capabilities are enhanced through cutting-edge R&D.
- The work done by the Net requires more effort than conventional prototyping as activities based on specifications provided by customers.
- Employees experience a greater sense of achievement knowing that they successfully completed challenging projects.
- Gain valuable information on R&D, and industry through their frequent interactions with their clients during the prototyping process.

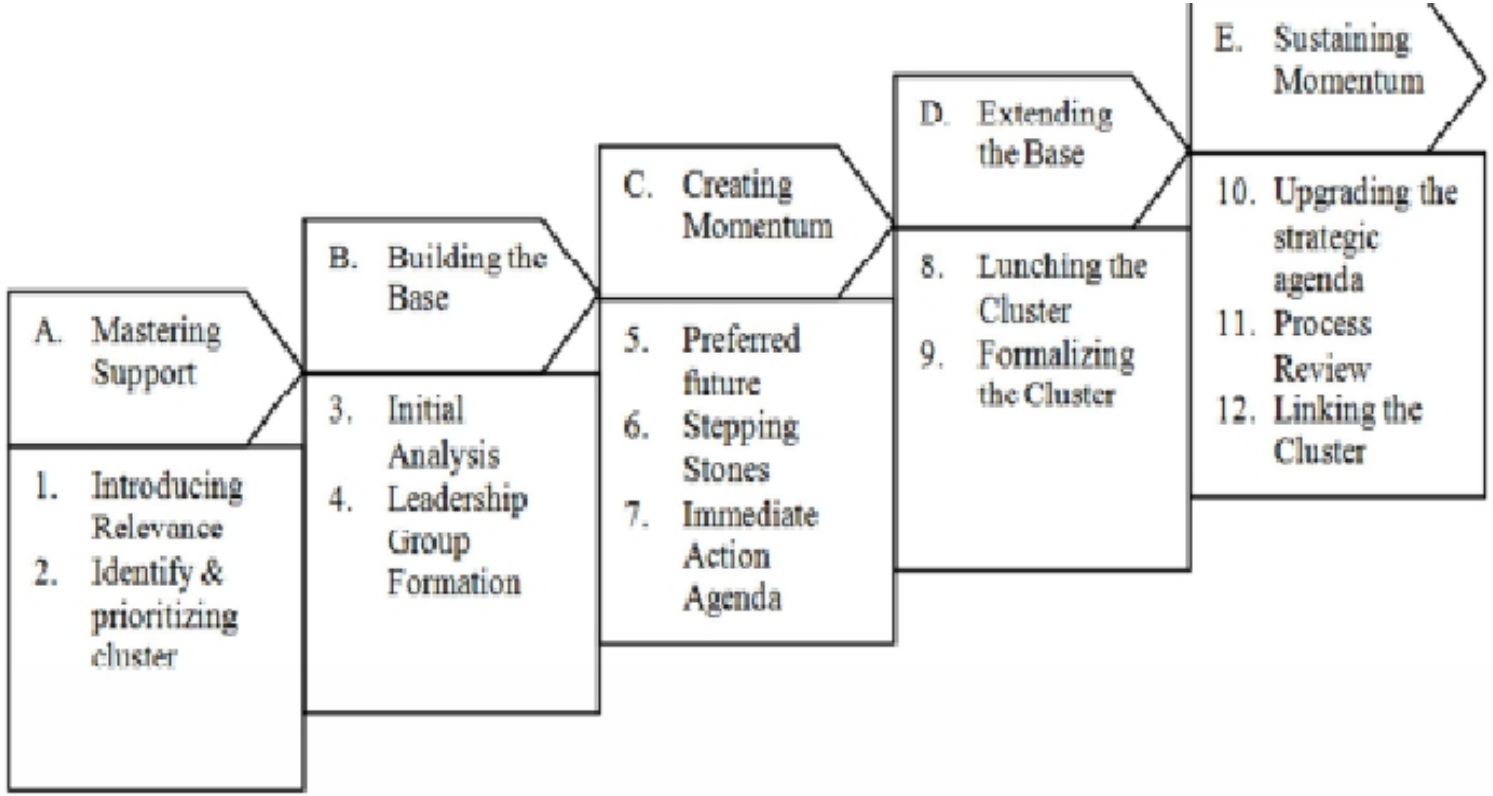
Phase 3- Prototyping track record

- Prototyping projects are completed and members build a track record.
- Gain confidence of customers and follow-on work, even though the initial business may not be profitable. Generates positive reviews from current customers, which can lead to new customers.
- Creates a virtuous circle, allowing theNet to aggressively win orders that other companies turn down.

Source: Yukari Mizuno, 2014.

5 Benchmarking the process – models for cluster development

5-Stage, 12-Steps Model for Cluster Development - New Zealand



Phase 1- Measure of support level is identified according to relevancy and priority.

Phase 2- Thorough analysis is done and a leadership group who will take over the development process is formed.

Phase 3- Emphasizes future goals to achieve, the milestones to reach and creating an agenda for taking actions.

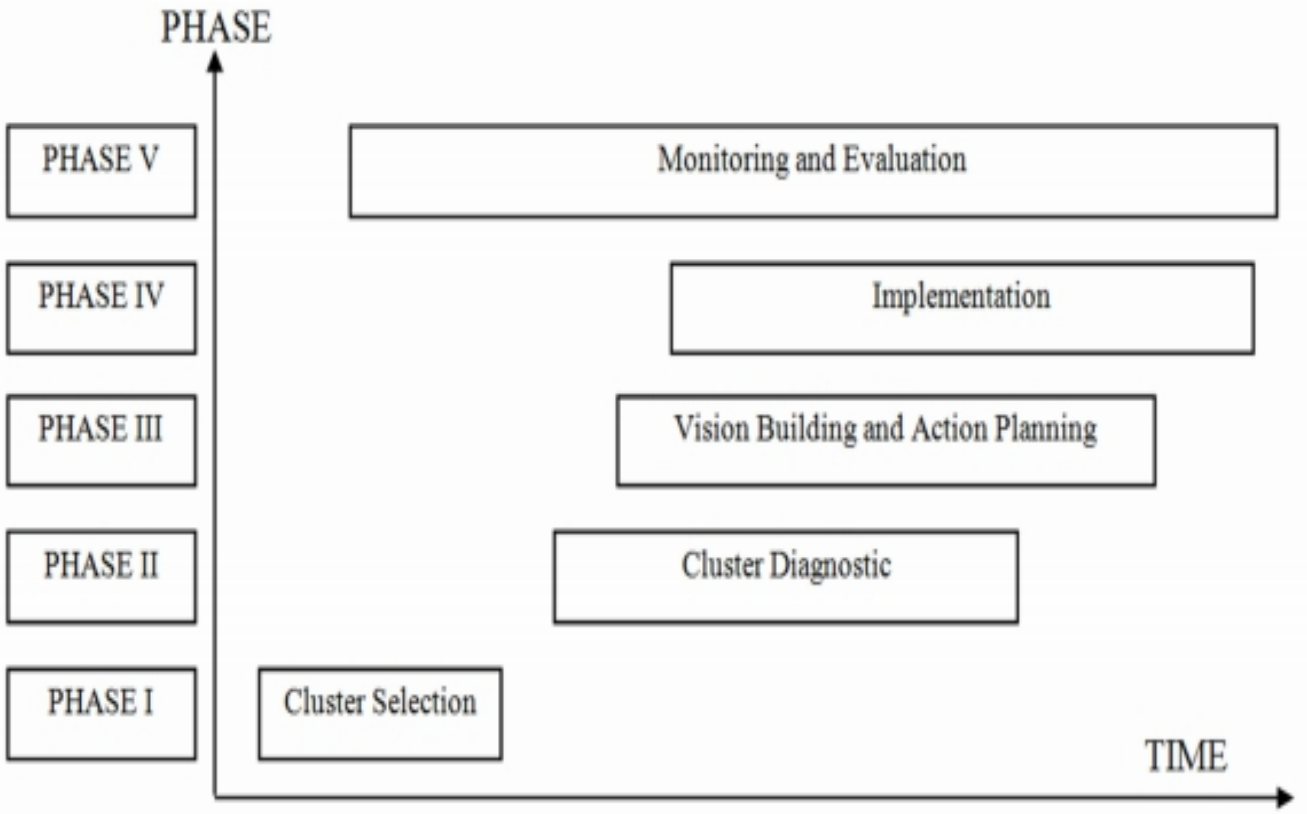
Phase 4- The base is extended by launching and formalizing the cluster development initiatives.

Phase 5- To sustain the development process, action plans are reviewed, upgraded and the cluster's business network is linked with internationally scattered similar or supportive clusters.

Source: Williams, I.F. (2005), Cluster Development: The How, TCI Annual Conference, Hong Kong.

6 Benchmarking the process – models for cluster development

The UNIDO Cluster Development Approach- India



Source: Murali, B.P. Banerjee, S. (2011), Fostering Responsible Behavior in MSMEs in Clusters: Role of Cluster Development Agent,Volume. III, Foundation for MSME Clusters.

Phase 1- During the cluster selection, which clusters are dynamic, demonstrable opportunities and differentiable in terms of product and production process are considered to have high priority.

Phase 2- Issues lie at the core of cluster underperformance is identified by a diagnostic study

Phase 3- Emphasizes future goals to achieve, the milestones to reach and creating an agenda for taking actions.

Phase 4- One-on-one meetings and informal workshops to extract points interesting but non-threatening for handshake building among the cluster members. This process share and celebrate good practice to establish an atmosphere of trust among attendees.

Phase 5- actions are monitored and evaluated in making corrections and upgradation of the process. Exit is planned and the responsibility of entire development process is handed over the leadership group within the cluster.

7 Benchmarking the process – models for cluster development

Cluster Development Approach in Republic of Croatia - Ministry of Economy, Labour and Entrepreneurship (MELE)

Top-Down Model	Bottom-Up Model
STEP 1 Analyse the Local Economy	STEP 1 Structure a Planning Framework
▼	▼
STEP 2 Cluster Stock Taking	STEP 2 Cluster Vision / Mission and Values
▼	▼
STEP 3 Establish the Leadership Team	STEP 3 External and Internal Analysis
▼	▼
STEP 4 Cluster Vision and Mission	STEP 4 SWOT Analysis
▼	▼
STEP 5 Identify Stepping Stones	STEP 5 Brainstorm and Evaluation of Strategies
▼	▼
STEP 6 Create Agenda of Immediate Actions	STEP 6 Select Option and Identify Result
▼	▼
STEP 7 Institutionalize the Cluster	STEP 7 Identify risk and critical factors
▼	▼
STEP 8 Upgrade the Strategic Agenda	STEP 8 Legalizing and Organizing
	▼
	STEP 9 Draft Action Plans
	▼
	STEP 10 Allocate Responsibility, implement and review

Major distinguishing fact between these two approaches are:

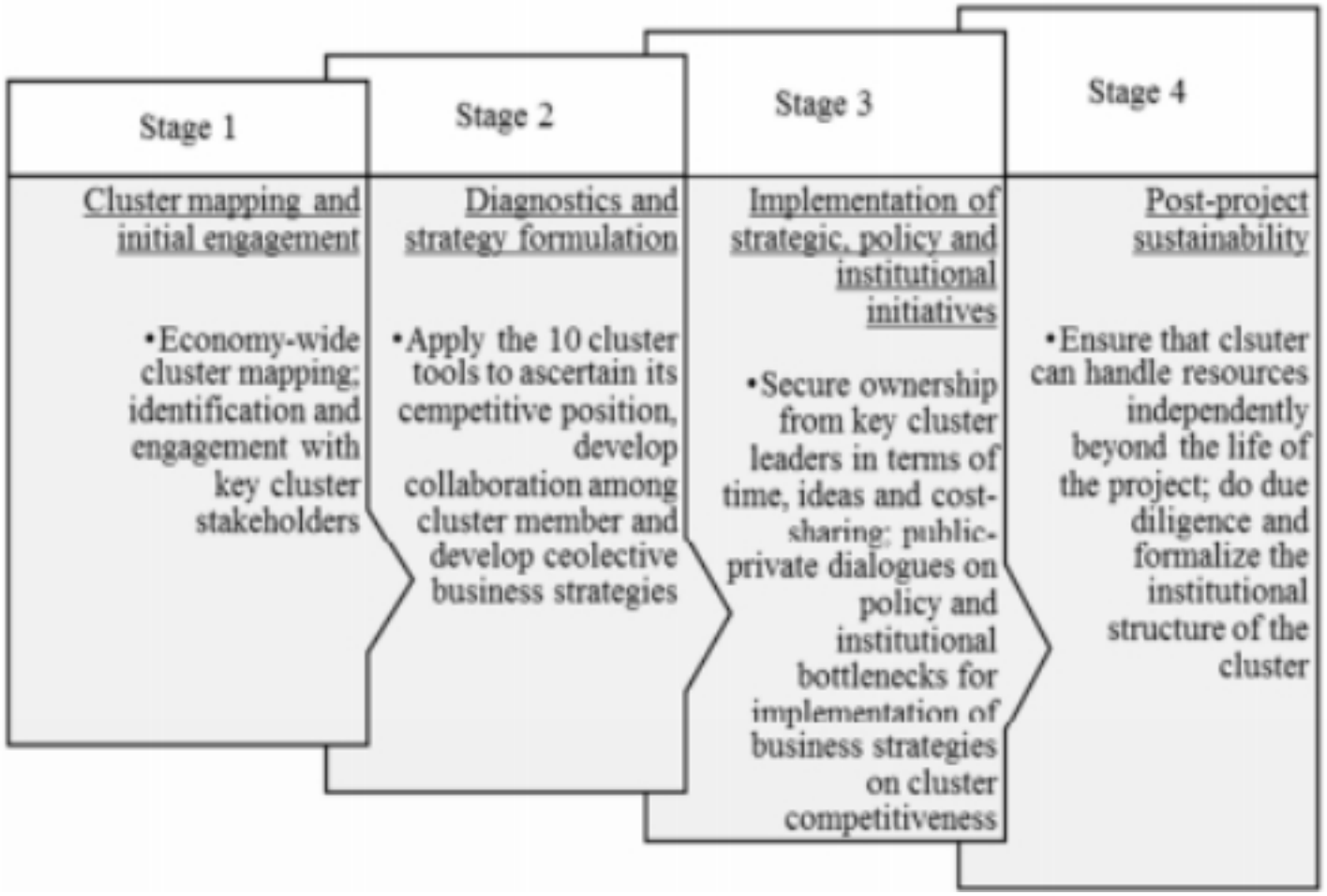
1) the **top-down approach** is considered to be an initiative to develop a cluster strategy which comes from actors within sectors themselves.

2) the **bottom-up approach** envisages a cluster priority list on the basis of a cluster analysis to further the development.

Source: Maxwell Stamp Plc. Prepared for the Ministry of Economy, Labor and Entrepreneurship (MELE), and the Central Finance and Contracting Agency (CFCA), Government of the Republic of Croatia, (2013).

8 Benchmarking the process – models for cluster development

Development of Cluster Initiative – International Trade



Phase 1- brings out the sketch-ups of each and every feature for a selected cluster by mapping all the inter-linkages among the stakeholders and flows of currency, goods and information within a single framework.

Phase 2- the cluster is diagnosed and an effective strategy is thrown for developing that particular cluster.

Economic, social, technological and environmental attributes are measured for satisfying the finalization of the development strategy.

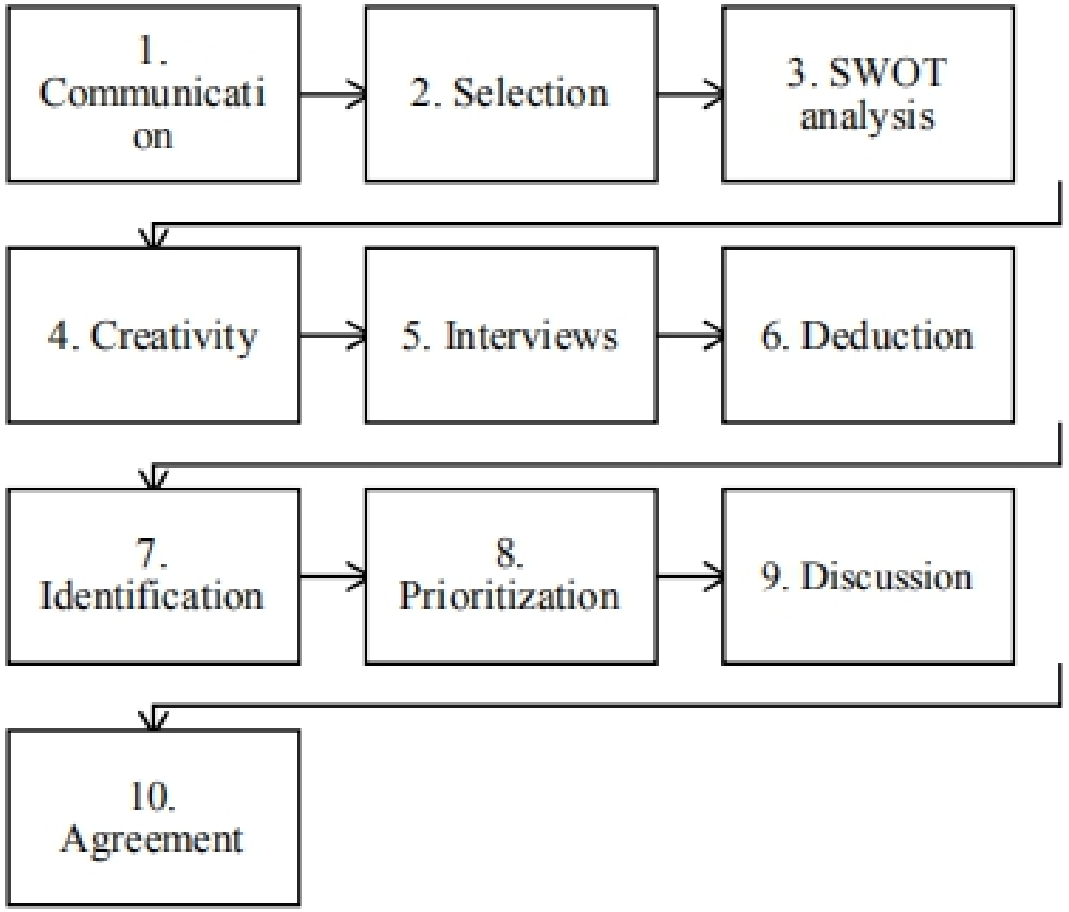
Phase 3- Implementation of the strategy taken. Policy-level and institutional initiatives are imposed for supporting the holistic development of that cluster.

Phase 4- A sustainable environment is left behind for maintaining the development in regular schedule.

Source: World Bank, (2009), Cluster for Competitiveness- A Practical Guide & Policy Implications for Developing Cluster Initiatives

9 Benchmarking the process – models for cluster development

Cluster Management Strategy by the European Cluster Observatory



Step 1- Enables communication of the upcoming strategy process among the cluster participants.
Step 2- Selection of stakeholders and cluster actors who are going to be involved.
Step 3- SWOT analysis
Step 4- Focus on current demand status and future expectations through creativity workshops, competitions and brainstorming sessions.
Step 5- New actors are involved in next step by interviewing.
Step 6- Inefficient and ineffective strategic objectives and operational targets are deduced to narrow down the specific development goals.
Step 7- Next the action fields are identified and correlations among them are pointed out.
Step 8- A prioritization of actions and services is held.
Step 9- Discussion with cluster actors and stakeholders.
Step 10- A formal agreement on action plan for development and implementation of support services.

Source: Gamp, T.L. Köcker, G.M. Nerger, M. (2014), Cluster Collaboration and Business Support Tools to Facilitate Entrepreneurship, Cross-sectoral Collaboration and Growth, European Cluster Observatory

Innovation Cluster Benchmark

Optics Cluster in Jenna, Germany

1

Cooperation

To promote exchange processes between universities and companies

2

Region-specified measures

To foster the development of clusters

3

Individual fields of technology

Measures to foster the development of clusters in individual fields of technology

4

Cross-industry competence

Cross-industry competence creation to leverage the synergies between industries

5

Competition

Cutting-edge cluster competition

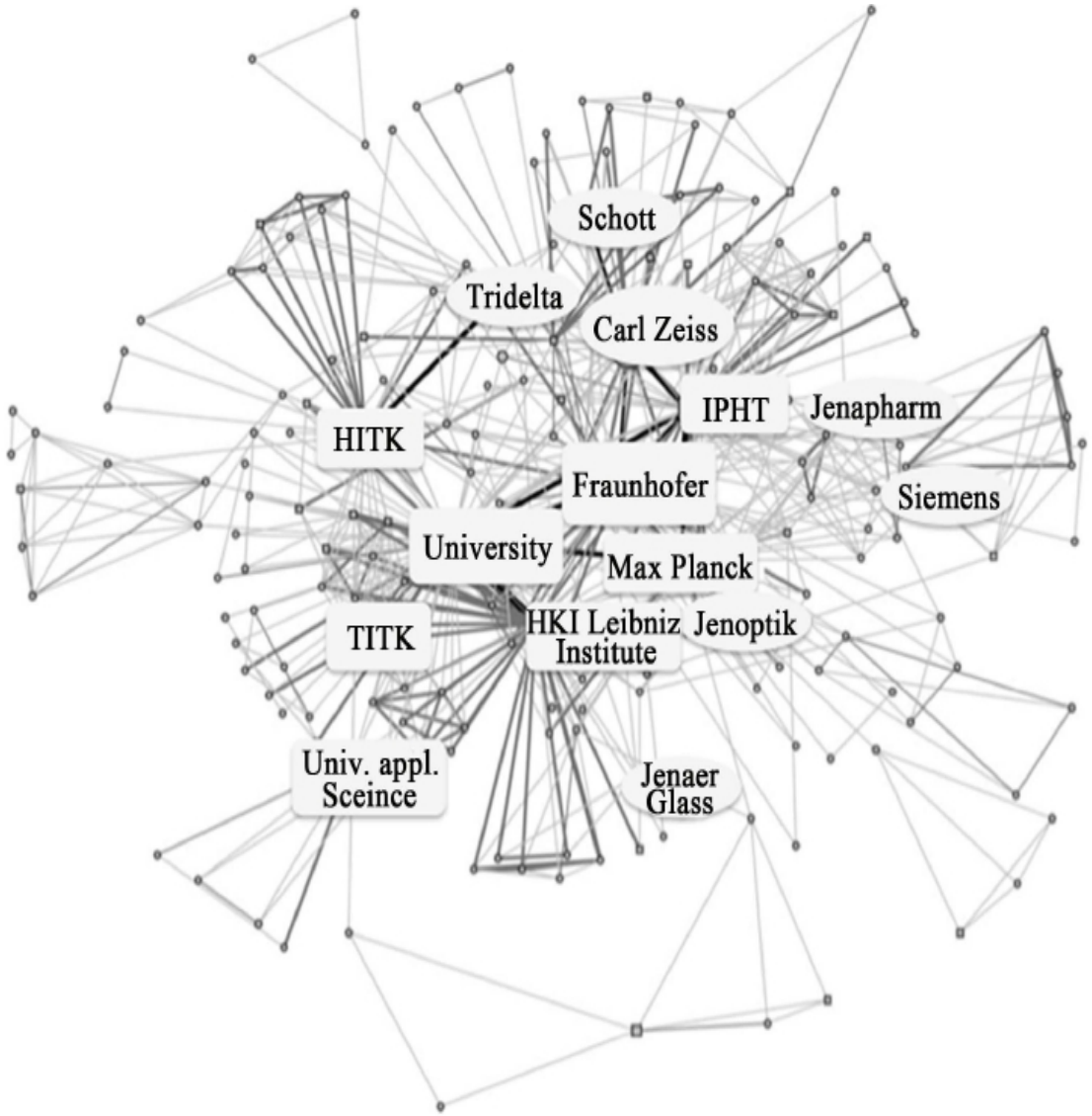
6

Government support

“Go-Cluster” initiative provide financial stimulus in the form of support for innovative services and funding for novel solutions.

Innovation Cluster Benchmark

Optics Cluster in Jenna, Germany



- Cluster members: 170 companies (92% are SMEs, 8% are larger firms with more than 250 employees). Other members include universities & non-university research centres.
- The companies are members of OptoNet (Industry assoc.) which **promotes networking & defines areas for purpose-oriented cooperation.**
- **Annual turnover**: USD 2.5 billion; Employees: 14,000
- **Export rate**: > 65% with key markets in Europe, North America, China & South East Asia.
- Optical **technology scientists:** 900 scientists at universities & research institutes.
- **Leveraging innovation networks in the region** with an average 253 patent applications per year from 1995 – 2001.

Key Success Factors

Optics Cluster, Jenna, Germany

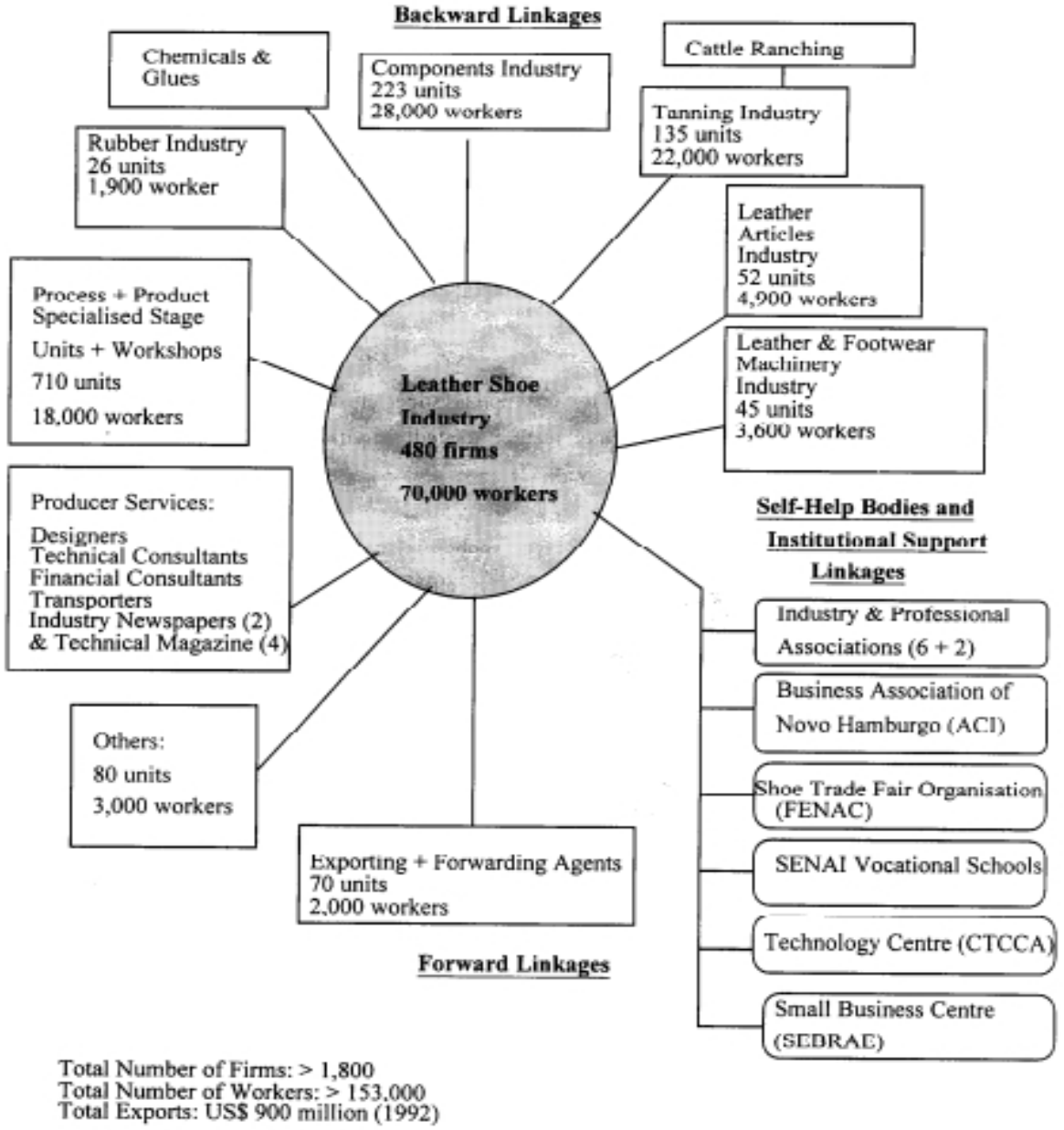
01 **The role of OptoNet: Facilitating networking as well as in defining a potential areas for cooperation between members of the cluster.**

02 **Network of innovators: Networking between companies & research institutions: which enabled the filing of 1776 patent application from 1995 – 2001, or an average of 253 patent filings per year. Collaboration with Fraunhofer Society as a research partner to build on existing technological foundations for specialised/ thematic projects with clear cluster strategy & fundamental development orientations.**

03 **Cluster system: Functioning internal cluster system with sufficient amount of external orientation.**

04 **Concentration of highly skilled labour: 900 scientists in optical technology.**

Internationalisation Cluster Benchmark



Sinos Valley Shoe Cluster, Brazil

- Cluster members: 480 shoe producers
- **Backward linkages:** local suppliers of inputs, machinery and producer services
- **Forward linkages:** buyers, especially export agents
- **Strategic intervention of support institutions**: shoe producer associations, shoe trade fair organisation, local municipal authorities, vocational schools, technology centre, export incentive programmes - facilitate moving into higher value added product markets.

Key Success Factors

01

Specialised producer services: freelance designers, technical and financial consultants, and specialized transport services

02

Local information flows: facilitated by the publication of two weekly newspapers and four monthly technical magazines, all of which specialize in the shoe industry

03

Locally-based export agents (Brazilian and foreign): Some represent leading US retailers while many other agents, connect local producers to outlets in Europe as well as Brazil. Played various roles:

- Intermediaries between producers and fashion conscious retailers.
- Enforcers of quality and as the generator of new ideas.
- Market experts: they visit shoe shops in the United States and Europe, international shoe fairs, then develop prototypes, set up prototype shops in the Valley to produce samples.
- Inspectors for product quality and production schedules
- they provide technical assistance, organised the transport and payment arrangements

Key Success Factors

04 **Various specific interests associations: associations for shoe producers; tanners; component producers; machinery; suppliers; Business Association; shoe trade fair organisation.**

05 **Shoe trade fair organisation: promotes the cluster's products by:**

- **Inviting foreign buyers to visit the local trade fair**
- **Financing visits by local producers to the United States and Europe in search of export orders.**

06 **Local technology centre for the leather shoe industry: private set up leather centre, run by local shoe producers and other allied firms.**

Key Success Factors

07

Public and private collaboration in organizing local exhibitions and fairs:

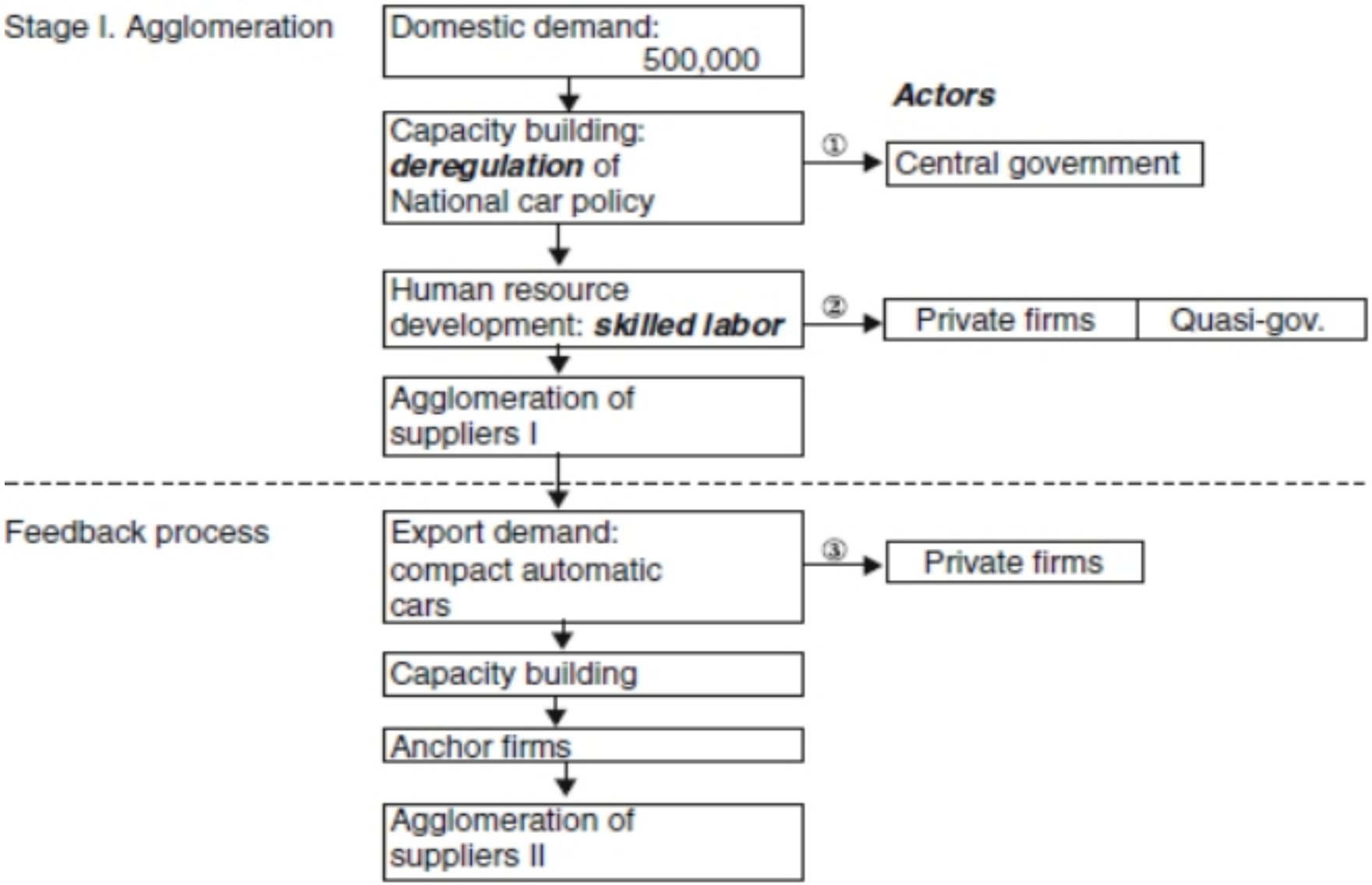
- Facilitate the cluster's entry into export markets
- Significant sources of information on product and process innovations were local exhibitions and fairs.

08

Export incentive programmes

- Local incentive programs in addition to federal programs.
- Several forms such as tax exemptions on exports, tax refunds, tax exemptions on imports for goods used in the production of exports and more

Malaysian Automotive Industry

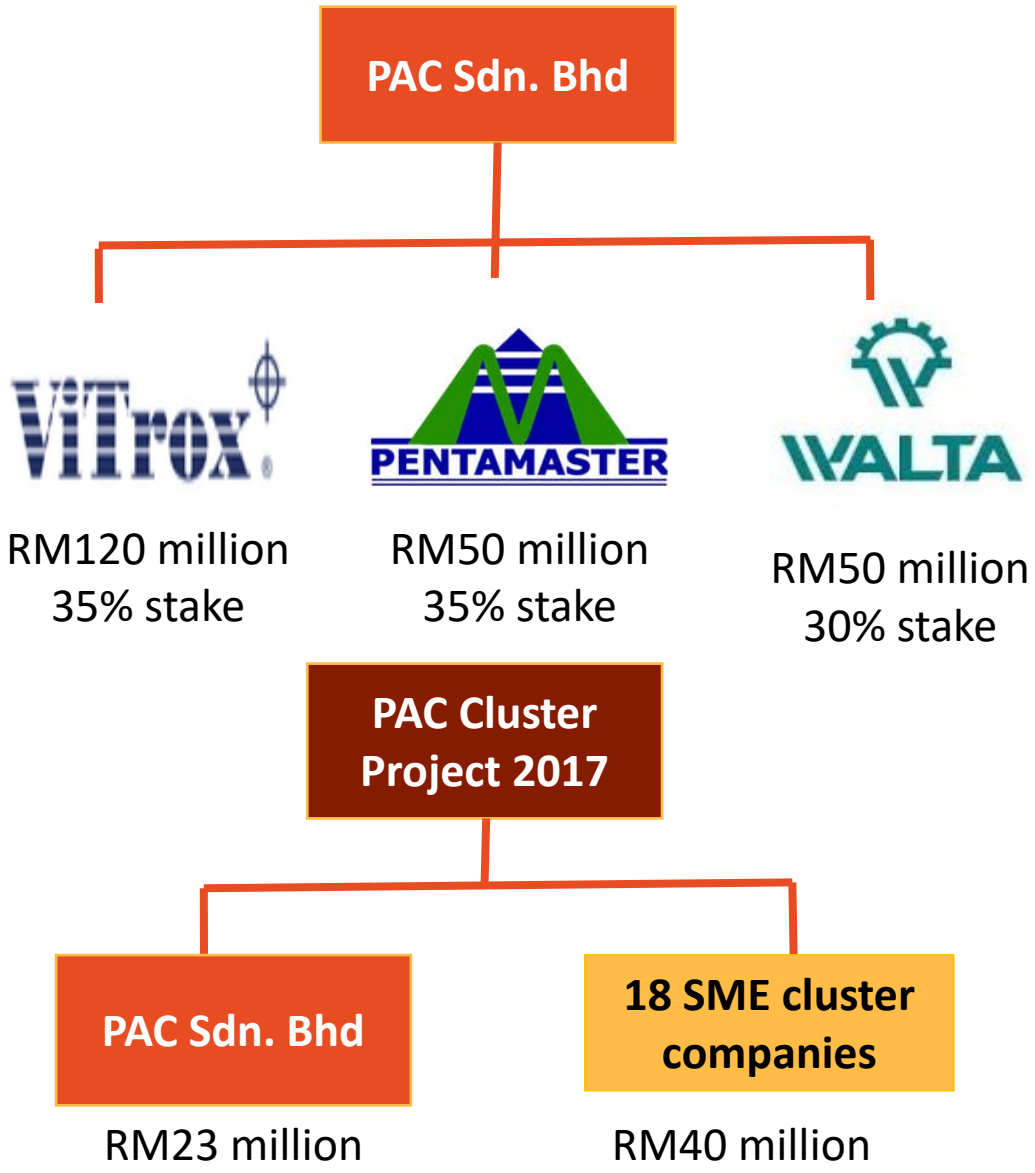


Source: Kuchiki & Tsuji (2010)

Penang Automation Cluster Sdn. Bhd (PAC) - Kawasan Taman Perindustrian, Penang, Malaysia

- Joint venture established by **ViTrox Corporation Berhad**, **Pentamaster Technology (M) Sdn Bhd**, and **Walta Engineering Sdn Bh**d in 2017.
- Business in designing, developing and manufacturing high precision metal fabrication components, modules, and systems for various industries.
- **Objectives of PAC**
  1. To build and manage the **local supply chain ecosystem** to support LLCs and MNCs.
  2. To support and fund the **cluster development.**
  3. To **develop and elevate local SME capabilities** to become best-in-class SMART SME and world class standard.

Penang Automation Cluster (PAC)



- First of its kind **SME precision metal fabrication or automation cluster.**
- Utilizing **5 acres of land** in the SME Village in Batu Kawan Industrial Park.
- **One-stop metal component supply chain hub** for multinational companies (MNCs).
- Effective pooling of SMEs to complement each instead of competing with each other.
- Bonded by **industry 4.0**
- **Market driven,** 80 per cent of its products are exported, including to the United States, Europe, Africa and Asia Pacific.
- Estimated 500 skilled jobs created, with qualified personnel able to attend the German Dual Vocational Training.
- **Delivery time cut short** as products will be transferred from one unit to another using just trolleys without the need for trucks and lorries.
- Malaysian Investment Development Authority (MIDA) to provide funding, especially in R&D, through the Domestic Investment Strategic Fund.

Source: Invest Penang, 2017

The Current Situation in Malaysia

- From a macro policy perspective, **industrial clustering** has been at the forefront, particularly in the implementation of **various economic corridors** (Iskandar, ECER, NCER, Score, & Sedia) aimed at distributing growth across Malaysia.

- **Industrial cluster policy for specific industries** however, are not very clear. **MPC is spearheading** the industry cluster initiative for the M&E industry.

- The initiative on industrial cluster is in line with **the aim** of making **Malaysia as a regional production centre.**

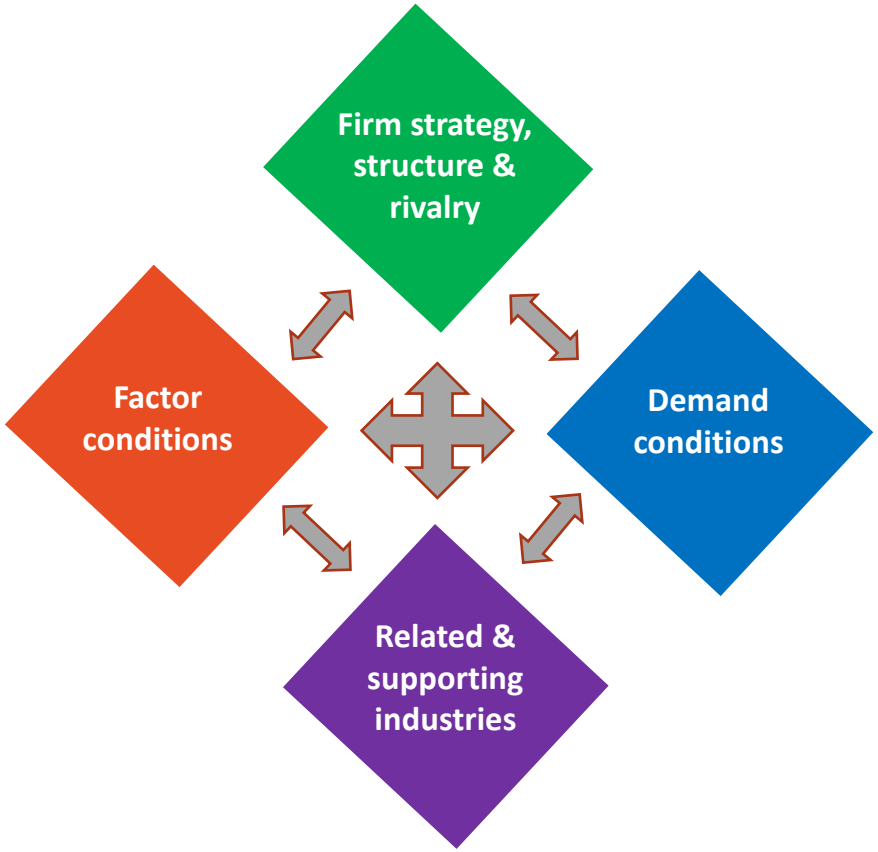
- While industry cluster concept has been implemented in other industries such as **tourism, furniture**, and **automotive**, the implementation of industry cluster of the **M&E industry is still very limited.**

- **Concentration of M&E companies in Klang Valley & Penang,** hence making the two areas as fertile test beds for industry cluster pilot project for the M&E industry in Malaysia.

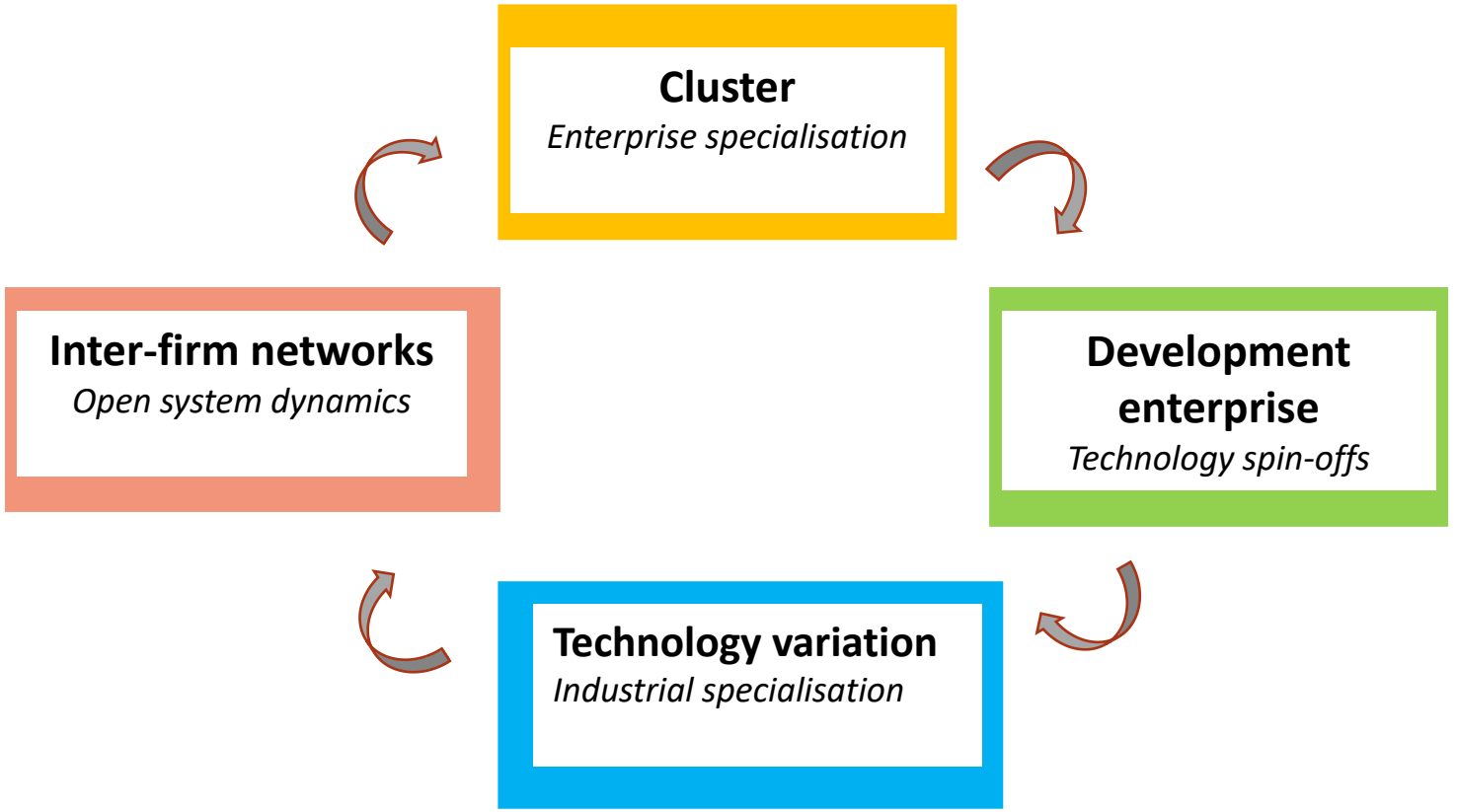
Source: EPU (2015); MPC (2018)

Taking into Account Strategies Under Diamond and Dynamic Cluster Models

Porter's Diamond Model



Best's Dynamic Cluster Model



Source: Porter (1990); Best (1999)

Objectives of Industry Cluster Creation

Outcomes- Innovation, Productivity, and Enterprise Creation

Sustainable Cluster Model

Best's Dynamic Cluster Model

Social Capital
(Formal & informal networking)
MEPN & Facilitator

Regular/ monthly meetings; Exhibitions; Conference

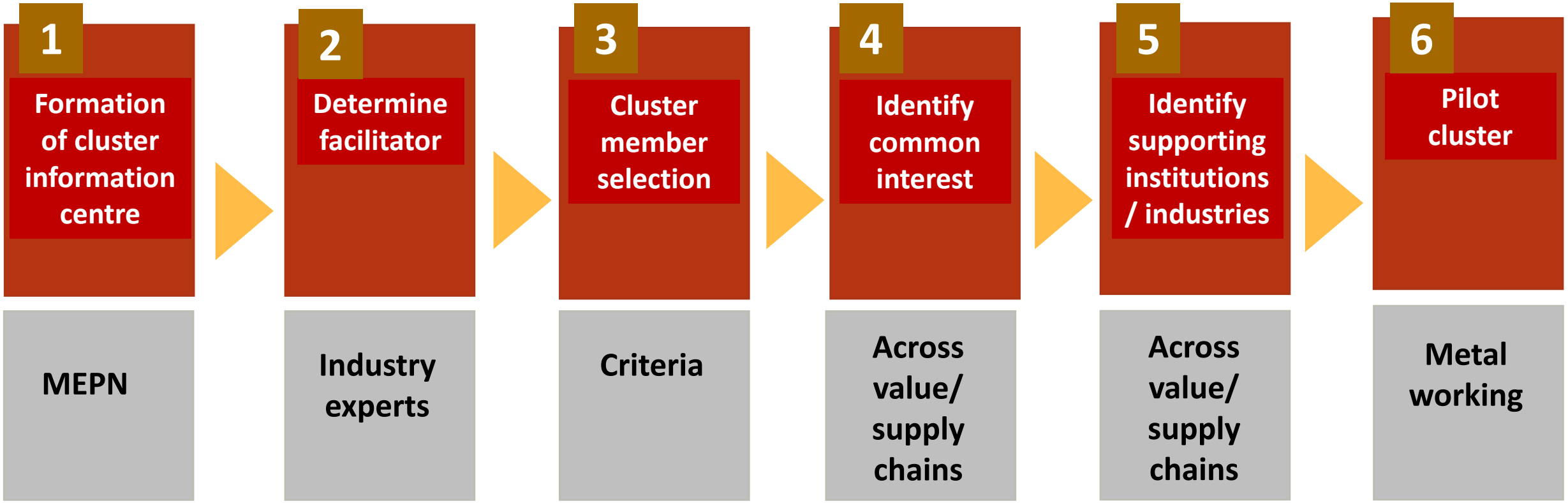
Porter's Diamond Model

Factor	Cluster Members	Demands
➢ Supplier	➢ Firms	➢ New customers ➢ Overseas expansion

Supporting Industries

Government; financial institutions; higher learning institutions; R&D

Cluster Formation Flow Chart



1 Information Centre - MEPN

Facilitate and coordinate the formation and development of clusters

Role

- **Gathering and updating of data** - specific products, specific markets, me mberships, association, track record
- **Sharing of information, database**, intelligence about market opportunitie s - to be shared with cluster members t**o facilitate the coordination of act ivities/production,**
- Information about **government support**
- Collect information about **skilled personnel** - as free lancers, retired profe ssionals, academics, consultants
- **Updated directory** of companies under M&E
- **Open information system** (open source) - to all members, free access
- Appointment of **clusters' facilitators**
- Provide **regular platforms/ forums/ meetin**gs for cluster members (cluste r level) e.g. yearly conferences for clusters, presentations - sharing, bench mark best practices, networking,
- **Highlight issues** faced by cluster members to be addressed.

2 Facilitator

Industry experts appointed by MEPN which may be tapped from the existing pool of MEPN industry advisors

Industry expert

Building trust, bonding, reciprocity, collective actions

Provide linkages - vertical & horizontal

Discuss and resolve issues faced by cluster members

3 Criteria of Cluster Member Selection

Growth potentials

- Firm size (revenue & number of employees)
- International experience/ serving international markets

CRITERIA

Change capacity

- Registered with MPC
- Willingness
- Business practice quality management system - ISO, 5S
- Industry 4.0 readiness test score

4 Common Interests

Common aim to integrate vertically & horizontally

- **Supply Driven- Backwards linkages, i.e Bulk-buying supply**
- **Demand driven- Forward linkages, i.e. with international markets**
- **Innovation driven- process, products, technology, services**
- **Environmental driven (i.e. waste management, turning waste into valuable material)**
- **Sharing Driven - sharing facilities via LinkM&E, e.g. warehousing, production, logistics, support services e.g. HR, accounting, marketing, legal, PR**

Sample case (Miller, 2003)

- A private hospital in Australia (250 beds and 400 staff), used AL to create ONE common performance management instrument to replace 27 existing systems. Guided by AL Consultant at all phases.

- **Phase 1:** 35 managers attend 2 days seminar on AL and agreed on objectives (performance management policy, the new instrument and the performance indicators), broken into 3 AL groups to work independently.

- **Phase 2:** Each group had weekly meetings lasting around 1.5 hours to develop agreed outcomes, took 8 weeks. Then, 3 members from each of the three groups formed a final composite action learning set to combine outcomes from the three action learning sets (draft policy, the new instrument and the performance indicators) into one coherent document.

- **Phase 3:** Implementation - observed and commented by consultants to each of the 35 managers at least once.

- **Phase 4:** Evaluation and Review - leadership competencies (leadership, collaborative, listening, coaching, performance setting, empathy, communication) of managers improved

5 Supporting Institutions & Industries

Institutions & industries which complement the cluster industry

Government – Federal & Local

Marketing & Promotion

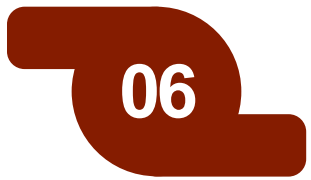
Universities & Skills Institutes

Legal

IT & Network

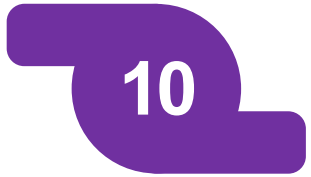
Financial Institutions

Human Resource



R&D

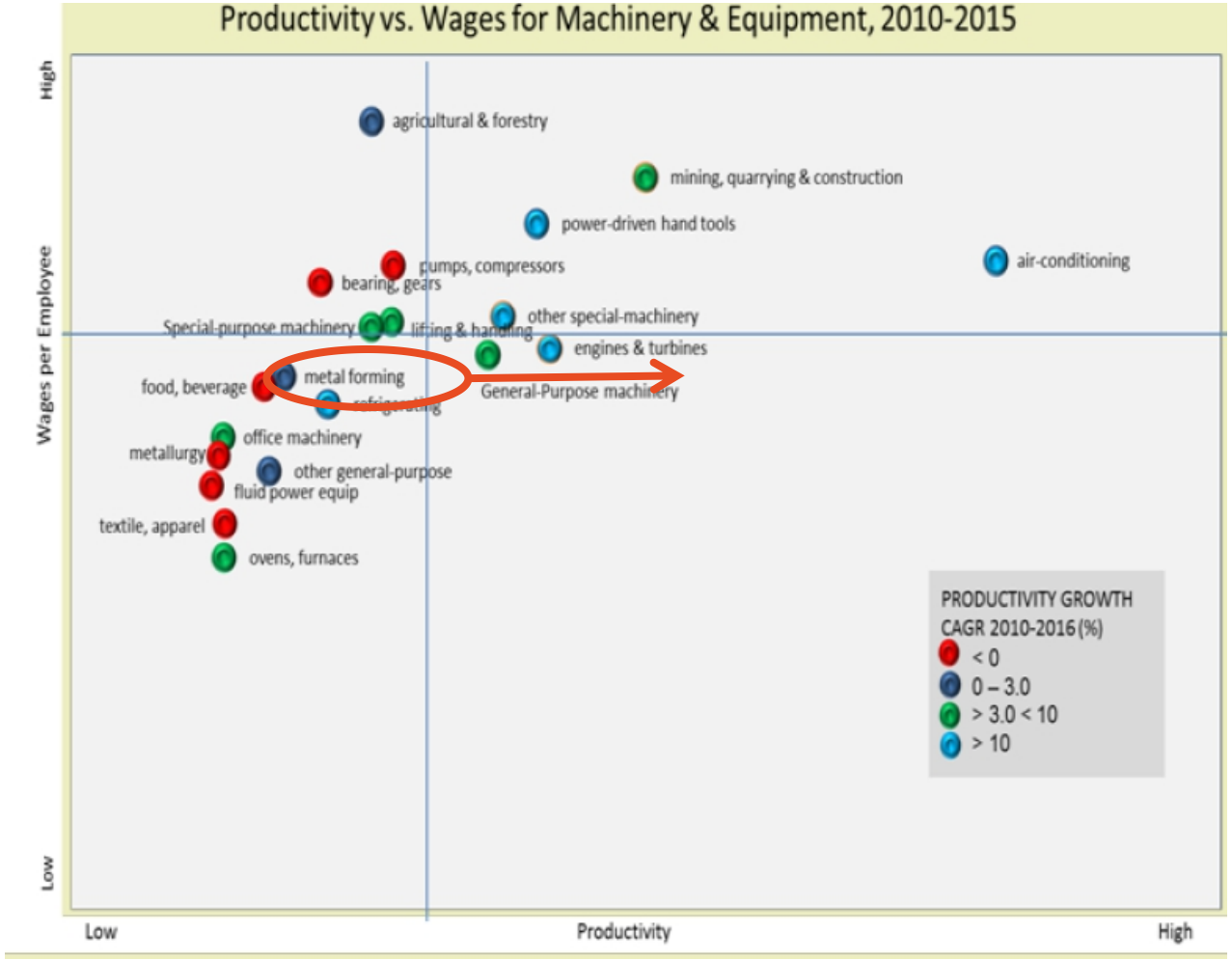
Transport & Logistics



Technology

6 Pilot Cluster – Metal Working

In line with current performance & growth potentials



Value added

RM2.9 billion

Output

RM8.9 billion

Employment

50,460

Salary & Wages

RM1.68 billion

Export

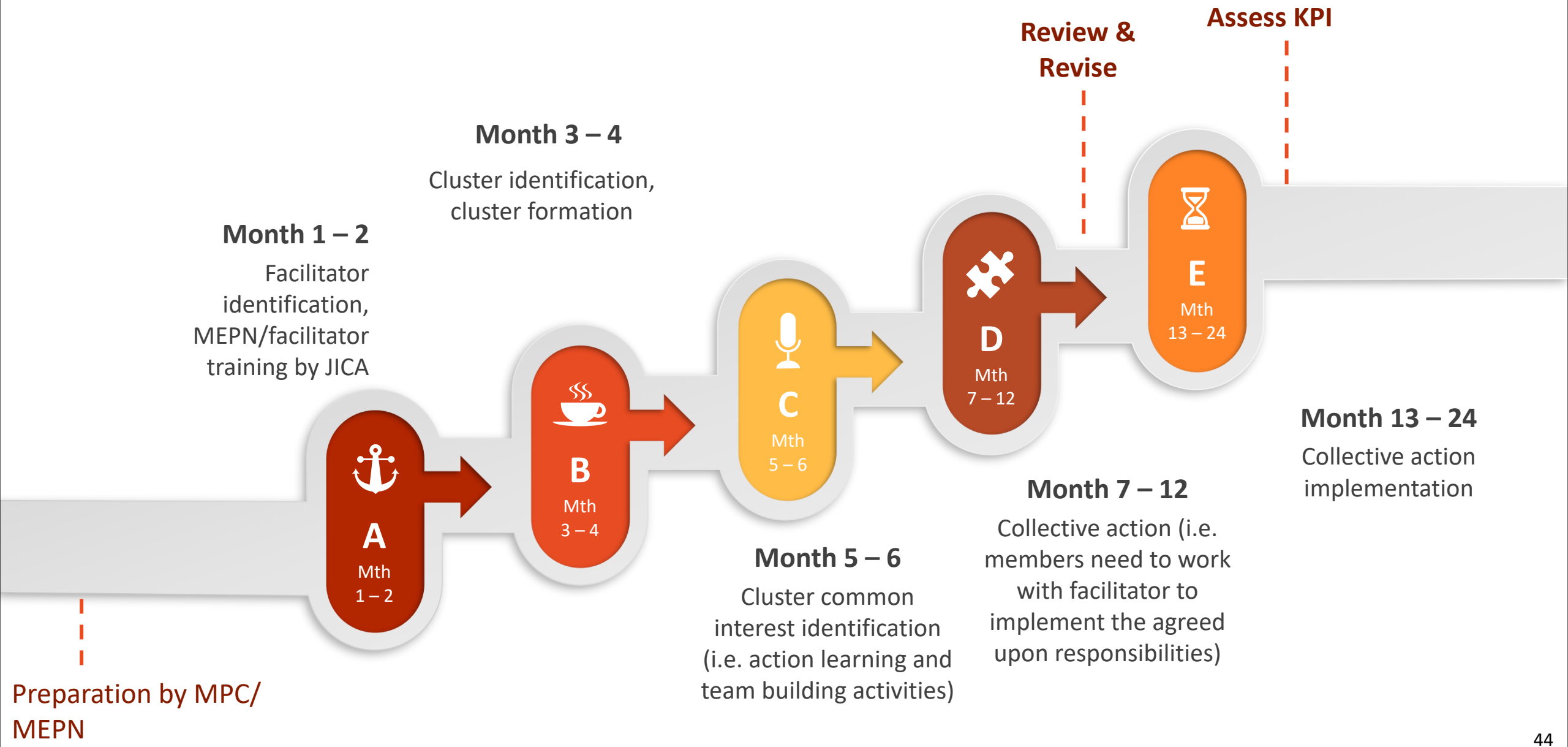
RM1.9 billion

Investment

RM13.65 million

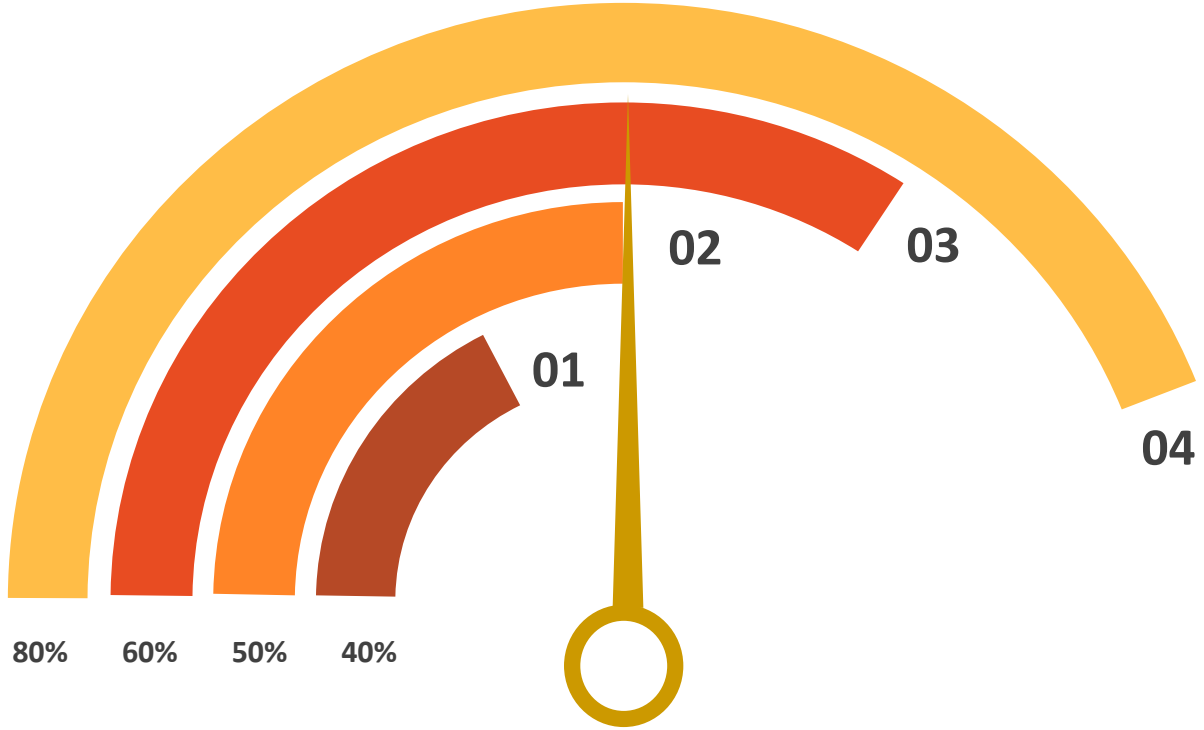
Source: DOSM (2019); MPC (2018); MIDA (2019)

Action Plan


Review & Revise
Assess KPI
Month 3 – 4
Cluster identification, cluster formation
Month 1 – 2
Facilitator identification, MEPN/facilitator training by JICA
A
Mth 1 – 2
B
Mth 3 – 4
C
Mth 5 – 6
D
Mth 7 – 12
E
Mth 13 – 24
Month 13 – 24
Collective action implementation
Month 7 – 12
Collective action (i.e. members need to work with facilitator to implement the agreed upon responsibilities)
Month 5 – 6
Cluster common interest identification (i.e. action learning and team building activities)
Preparation by MPC/ MEPN

Cluster Success Indicators

Setting multifaceted key performance indicators is key to capture the various aspects of success



<u>Note:</u>
Hard to quantify but important achievements include. co-creation, trust, informal collaborations & stimulant for creation of more clusters need to also be taken into account

01 **Productivity related**
- Revenue increase
- Materials (value of materials used in the production process)
- Capital stock (net book value of machinery and equipment)
- Labor productivity

02 **Export related**
- Export revenue
- Number of products exported
- Number of countries penetrated.

03 **Innovation related**
- R&D expenditures
- Product innovation
- Process innovation.

04 **Employment related**
- Number of employees by type of education
- Wages.

Industry Cluster Initiative 2021 Pilot Budget

Initiative	Objective	Scope	Period	Funding	Implementor
Create industry cluster based on shared economy concept	• **To improve competitiveness, productivity, and innovation**	<u>To conduct a pilot project for industry cluster for M&E.</u> • Facilitators - costs of procuring the services of industry experts as facilitators. • Training for facilitators provided by JICA and MEPN. • For facilitators to participate in Change Management Program in Ivy League universities, i.e. Harvard. • Action Learning Sessions- implement action learning sessions with a group of industry players (8 per session- 5 sub-groups, 2 months follow-through). • Rental of facilities	**2021 – 2022**	**<u>RM2,000,000</u>** RM480,000 (RM120,000 X 2 years X 2 facilitator) RM100,000 (RM50,000 X 2 facilitators) RM100,000 (RM50,000 X 2 facilitators) RM1,000,000 RM320,000	MEPN

To do list - Fast Track (24 Months)

	Activities	Month																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Planning Stage																								
1	Preparation by MEPN: - Engagement sessions (invite speakers from JICA, PAC, Flexe, UPM etc) - Physical information center formation (MEPN Association) - Visit to Kyoto Shisaku Net																								
	Implementation Stage																								
2	Information Center: - Gather and update information (database, market intelligence, government support, skilled personnel, M&E directory) - Provide regular platforms/ forums/ meetings for cluster members (e.g. yearly conferences for clusters, presentations).																								
3	Facilitator - Appointment of facilitator by MEPN - Training by JICA (Facilitator, MEPN) - Training by WIAL (World Institute of Action Learning)																								
4	Cluster Formation: - Selection criteria (growth potential & change capacity) - Target 10-20 companies - Co-ordinated by Facilitator in trust-building																								
5	Identify Common Interest: - Co-ordinated by Facilitator in identifying common interests - Ground rules amongst members discussed and agreed upon (i.e. KPI) - Identify supporting institutions																								
6	Collective action implementation coordinated by Facilitator: - Regular meetings and information sharing sessions - Continous training - Team-building sessions																								
7	Creation of LINKM&E App (Virtual Cluster): - Complement physical information center - Sharing economy concept championed by cluster members - Support collective action implementation - Developed by MEPN																								
8	Work-In-Progress Review and Revise - Assess KPI - Feeback sessions - Assessment report by Facilitator to submit to MEPN																								
7	Collective action implementation coordinated by Facilitator: - Regular meetings and information sharing sessions - Continous training - Team-building sessions																								
	Review Stage																								
8	Review and Revise - Assess KPI - Feeback sessions - Assessment report by Facilitator to submit to MEPN																								

To do list - Common Track (5 years)

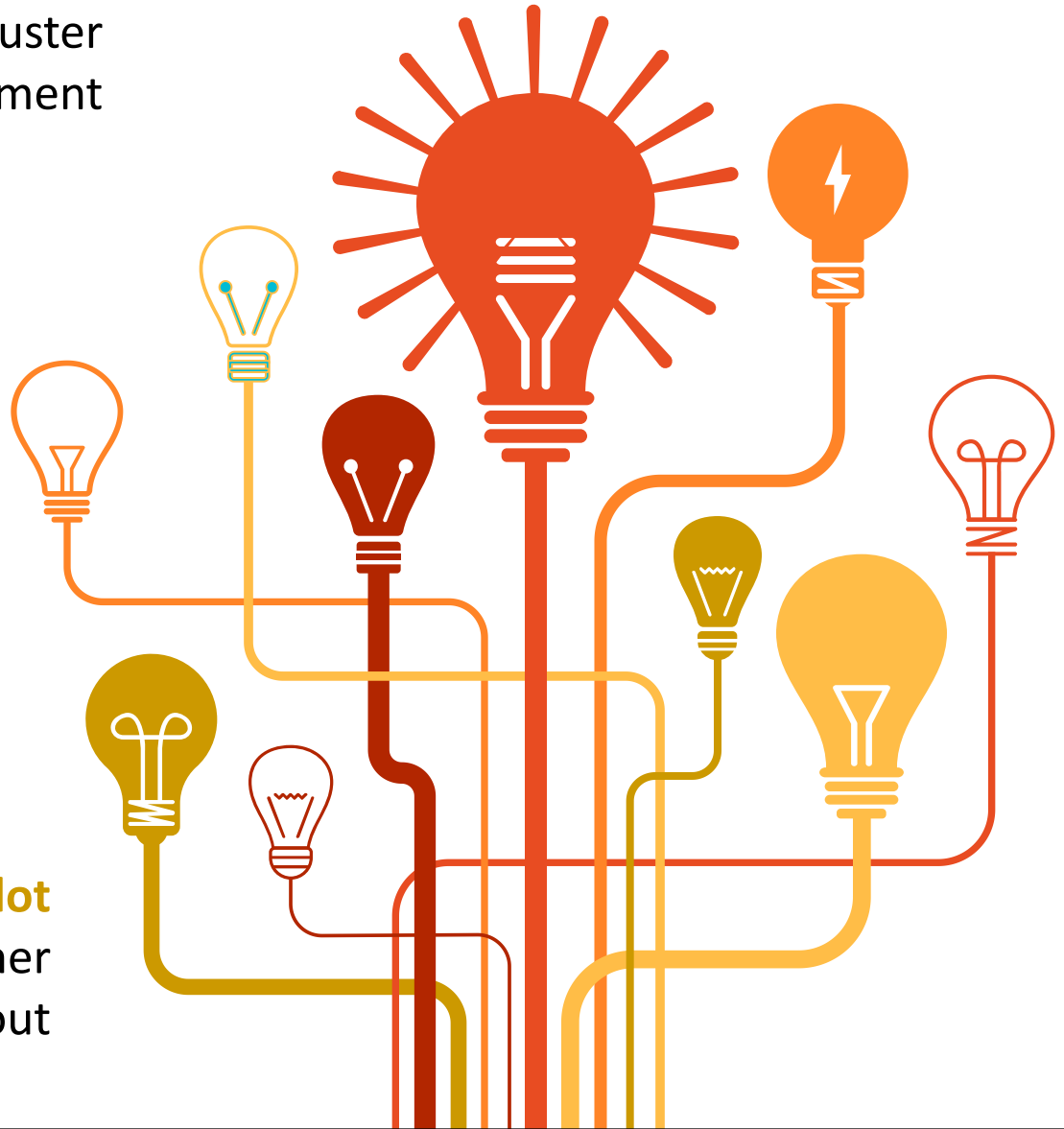
	Activities	Year 1	2	3	4	5
1	Engagements - Provide multiple platforms (e.g. forums, seminars, conferences) - Showcase success story of fast track adopters					
	Implementation Stage					
2	Information Center: - Gather and update information (database, market intelligence, government support, skilled personnel, M&E directory) - Provide regular platforms/ forums/ meetings for cluster members (e.g. yearly conferences for clusters, presentations).					
3	Facilitator - Assign trained facilitator - Coordinate common interests' identification - Cluster Formation: - Selection criteria (growth potential & change capacity) - Target 10-20 companies - Co-ordinate trust-building activities					
4						
5	Identify Common Interest: - Co-ordinated by Facilitator in identifying common interests - Ground rules amongst members discussed and agreed upon (i.e. KPI) - Identify supporting institutions					
6	Collective action implementation coordinated by Facilitator: - Regular meetings and information sharing sessions - Continous training - Team-building sessions					
7	Creation of LINKM&E App (Virtual Cluster): - Complement physical information center - Sharing economy concept championed by cluster members - Support collective action implementation - Developed by MEPN					
8	Work-In-Progress Review and Revise - Assess KPI - Feeback sessions - Assessment report by Facilitator to submit to MEPN					
7	Collective action implementation coordinated by Facilitator: - Regular meetings and information sharing sessions - Continous training - Team-building sessions					
	Review Stage					
8	Review and Revise - Assess KPI - Feeback sessions - Assessment report by Facilitator to submit to MEPN					

Key Takeaways

MEPN as 'Information Centre' in driving the agenda for cluster formation and development

Industry experts as 'Facilitators' who work hand-in-hand with cluster members in the formation and development of the cluster

Implementation of a **'pilot project'** which can be further rolled out



Network with supporting institutions such as government, universities, non-universities research institutes and others

Cooperation and competition between member clusters to stimulate innovation

Functional cluster system with external orientation

TERIMA KASIH / *THANK YOU*

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