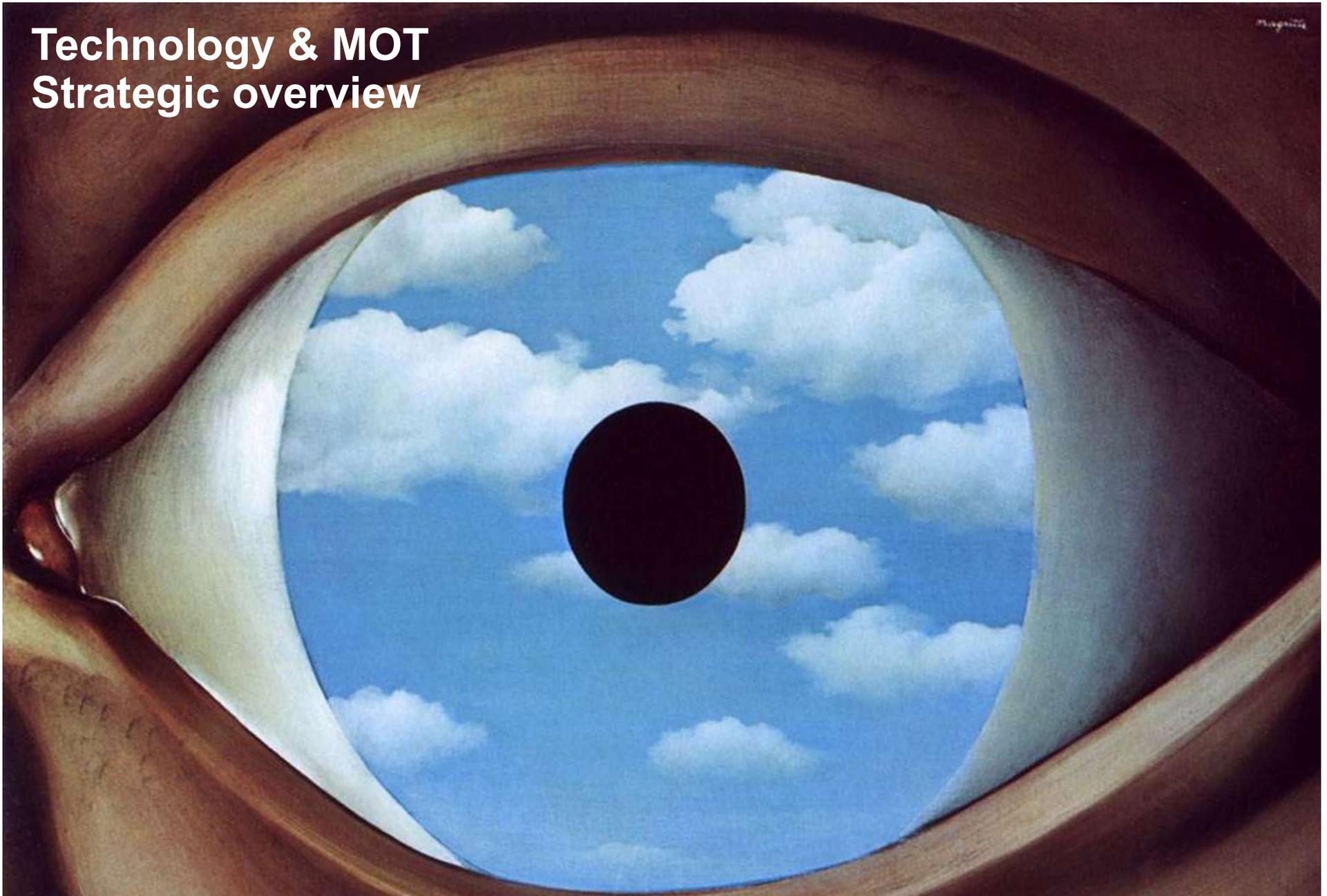# Technology & MOT
Strategic overview

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Technology Definition

Technology = Knowledge + Application

Technology is the practical implementation of knowledge to respond human endeavor.

Knowledge = Tacit + Explicit

Knowledge = Know-how + Know-why
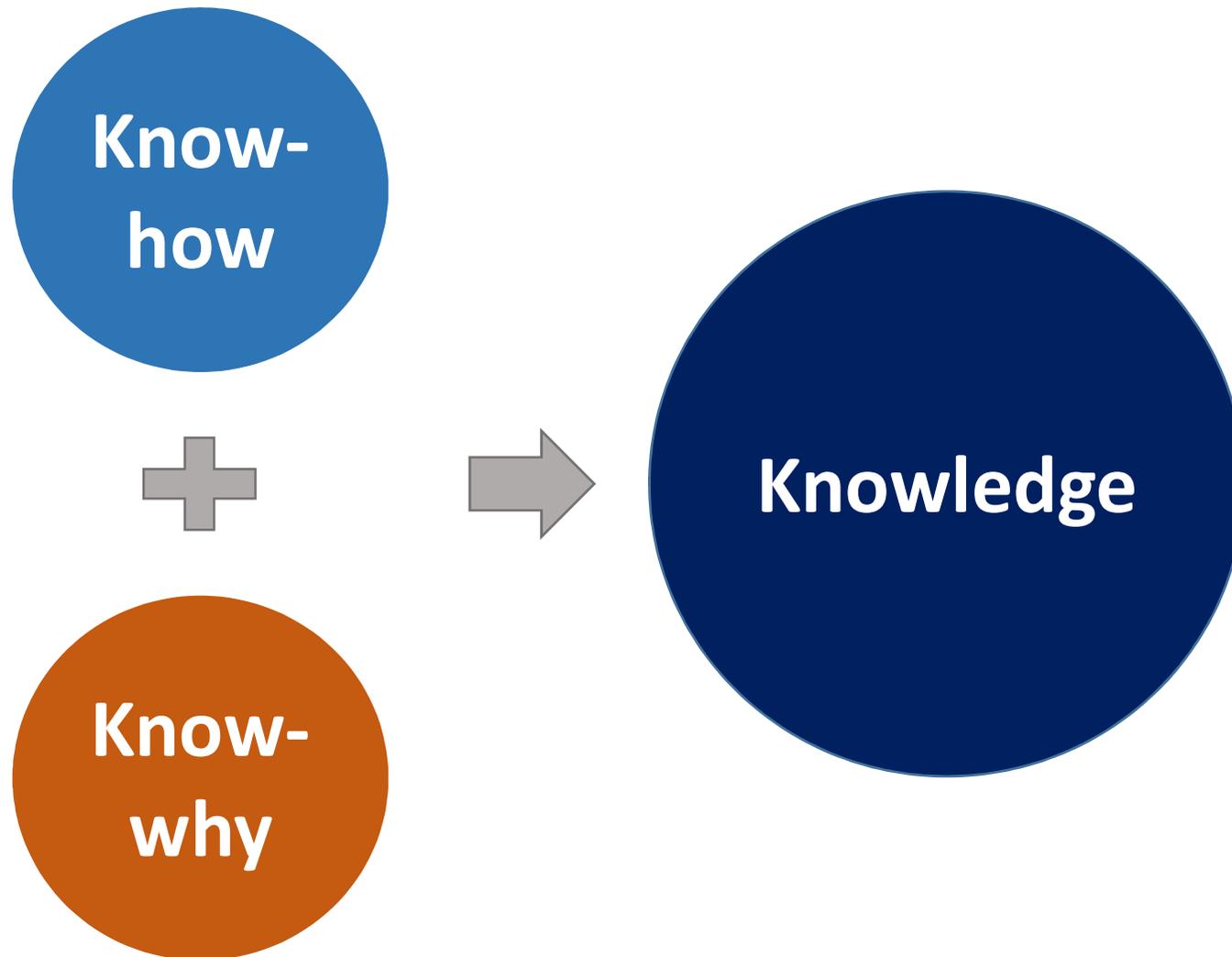
Tacit vs. Explicit Knowledge

Explicit Knowledge
- Declarative information
- Rules & procedures

Tacit Knowledge
- Pattern recognition
- Perceptual discrimination
- Judging typicality
- Mental models
- Mindsets

Know-how vs. Know-why

Technology Definition ...

Technology = Knowledge + Artefact + Skill

Khalil

Technology:

✓ Machine embodied – **Techoware/Artefact**
✓ Person embodied – **Skill + Tacit Knowledge**
✓ Document embodied – **Explicit Knowledge**

Zeleny

Why Technology is Important? ...

Technology is not important for its own sake, but is important if it affects Competitive Advantage and/or Operational Objectives

Why Technology is Important?

Every activity uses a set of technologies for combining some inputs to produce some outputs.

Inputs ⟶ | Technology | ⟶ Outputs

M. Porter

Why Technology is Important? ...

Technology is embodied not only in primary but also in support activities.

A firm as a collection of activities, is a collection of technologies (Value Chain of Technologies).

M. Porter

Value Chain of Activities

SUPPORT ACTIVITIES

FIRM INFRASTRUCTURE

HUMAN RESOURCE MANAGEMENT

TECHNOLOGY DEVELOPMENT

PROCUREMENT

MARGIN

INBOUND LOGISTICS	OPERATIONS	OUTBOUND LOGISTICS	MARKETING & SALES	SERVICE

MARGIN

PRIMARY ACTIVITIES

Value Chain of Technologies

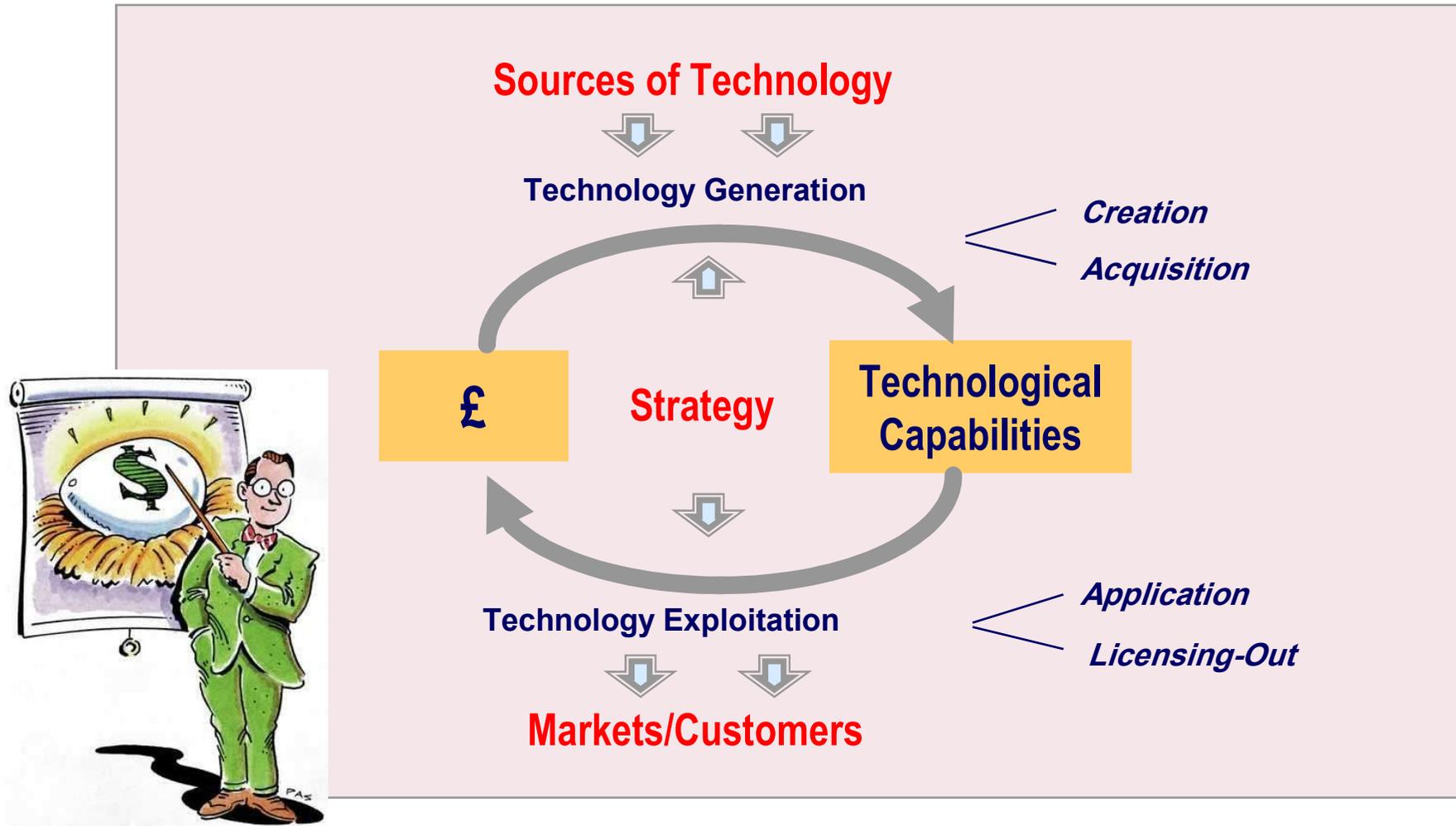|				
FIRM INFRASTRUCTURE	Information System Technology Planning and Budgeting Technology Office Technology			
HUMAN RESOURCES MANAGEMENT	Training Technology Motivation Research Information Systems Technology			
TECHNOLOGY DEVELOPMENT	Product Technology Software Development Tools Computer-aided Design Information Systems Technology Pilot Plant Technology			
PROCUREMENT	Information System Technology Communication System Technology Transportation System Technology			
Transportation Technology Material Handling Technology Storage and Preservation Technology Communication System Technology Testing Technology Information System Technology	Basic Process Technology Materials Technology Machine Tool Technology Material Handling Technology Packaging Technology Maintenance Methods Testing Technology Building Design / Operation Technology Information System Technology	Transportation Technology Material Handling Technology Packaging Technology Communication System Technology Information System Technology	Media Technology Audio & Video Recording Technology Communication System Technology Information System Technology	Diagnostic and Testing Technology Communication System Technology Information System Technology
INBOUND LOGISTICS	**OPERATIONS**	**OUTBOUND LOGISTICS**	**MARKETING & SALES**	**SERVICE**

MARGIN

Why Technology is Important? ...

Technology enables firms to improve the efficiency & effectiveness of their activities in order to achieve operational or strategic objectives.
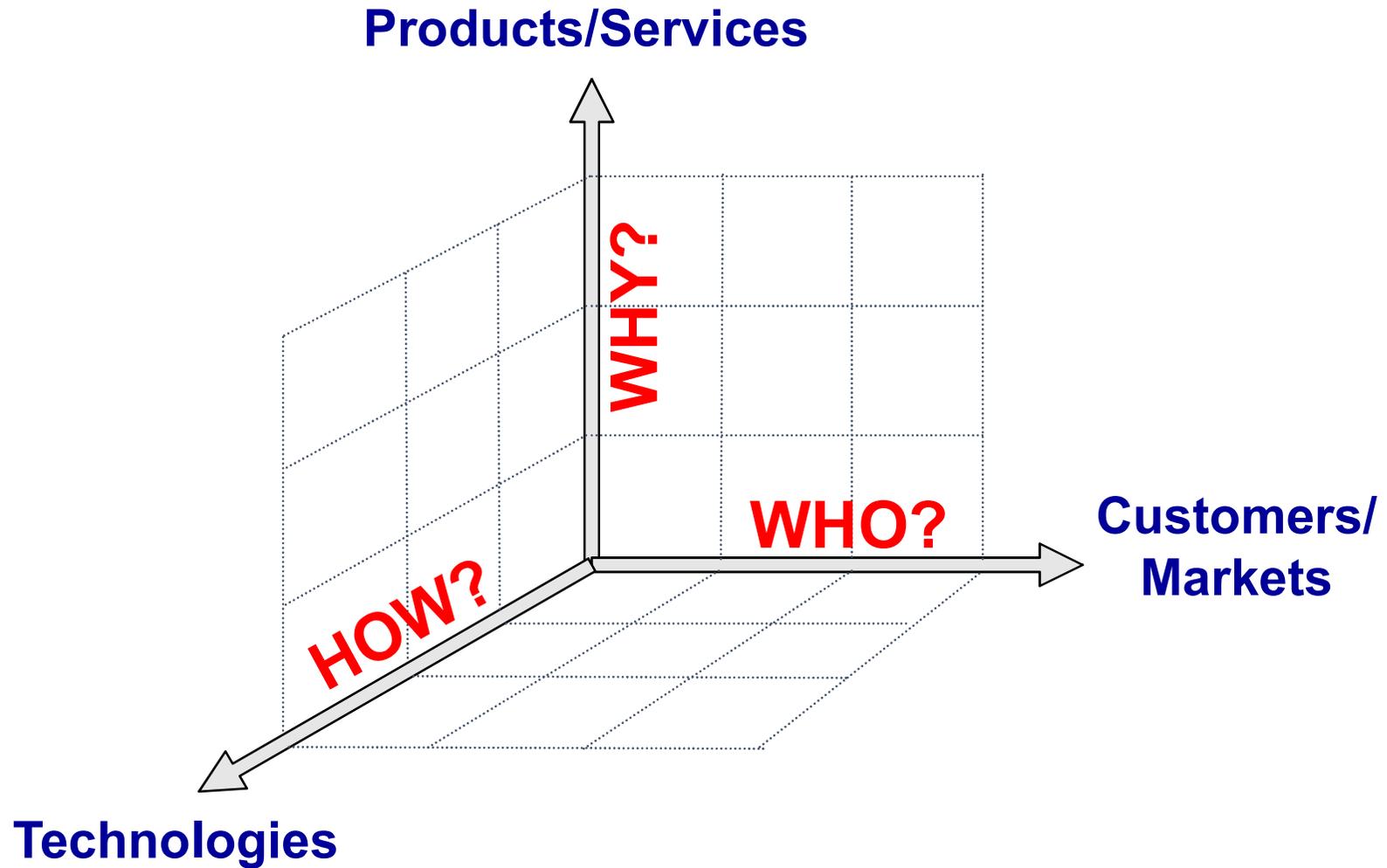
Technology is also a major source of linkage within a value chain.

M. Porter

Why Technology is Important? ...

Sources of Technology

Technology Generation

Creation
Acquisition

£   **Strategy**   **Technological Capabilities**

Application
Licensing-Out

Technology Exploitation

Markets/Customers

Technology & New Business

Products/Services

WHY?

WHO?

Customers/ Markets

HOW?

Technologies

Technology & New Business ...

Technologies					Products	Markets				
T_1	T_2	T_3	T_4	T_5		M_1	M_2	M_3	M_4	M_5
					P_1					
					P_2					
					P_3					
					P_4					
					P_5					
					P_6					
					P_7					
					P_8					
					P_9					
					P_{10}					