

A Systems Perspective on Business Model Evolution

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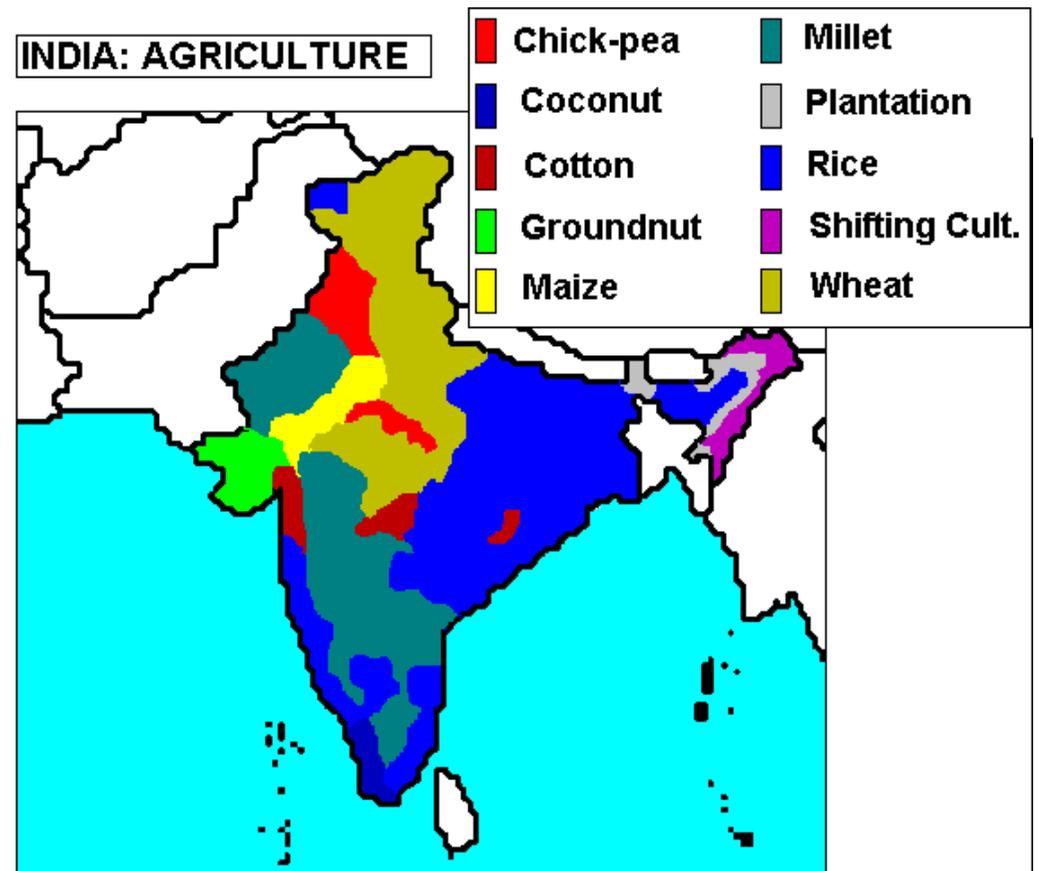
Source:

Velu, C. (2017) A Systems Perspective on Business Model Evolution:

The Case of an Agricultural Informational Service Provider in India, *Long Range Planning*, 50(5), 603-620.

Market for agricultural produce in India

- ▶ Agricultural produce in India
 - Mismatch in supply and demand due to distance of markets from farm land in India
 - Significant price variation of up to 20 per cent compared to nearby markets
- ▶ Farmers in India earn
 - as little as 25 per cent of the value of the final price of their raw produce
 - compares less favourably to the 40-50 per cent in developed countries



ALPHA launched I-AGRI in India in 2007

- ▶ Personalized professional information service to the farming community (\$5 per quarter)
 - spot crop prices
 - localised weather forecast
 - crop advisory
 - commodity news & information
- ▶ Delivered in local language
 - over 2.75m farmers
 - over 50K villages
 - 450 crop varieties
 - Initially in Maharashtra, Punjab & Haryana and expanding further (18 states)

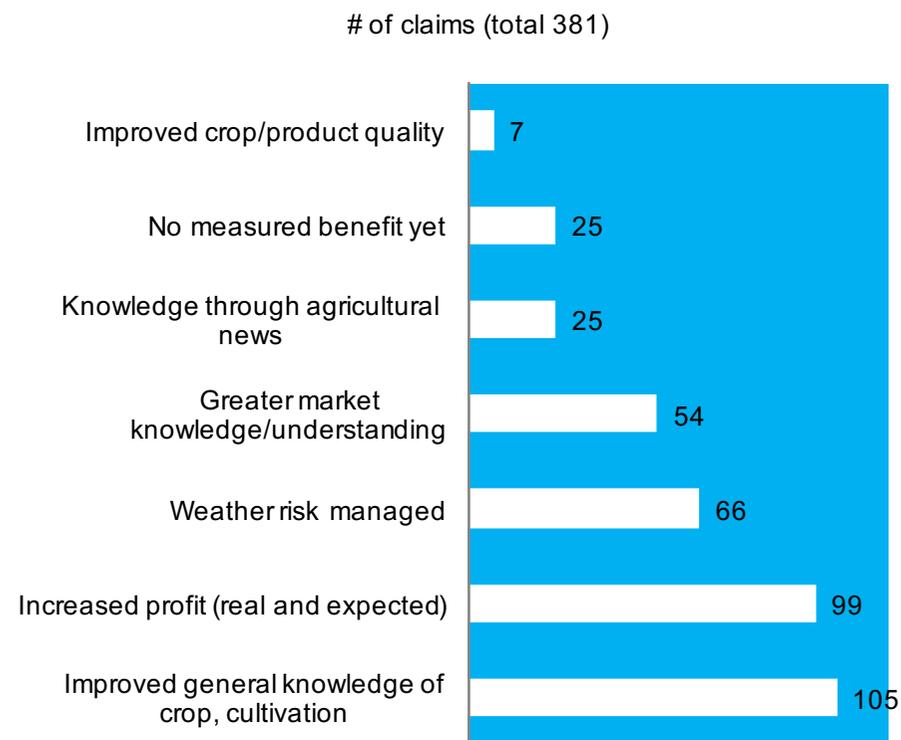


Significant benefits from I-AGRI

"Knowledge of market prices has made it easier to sell produce at good rates."
- Baosaheb Narekar, farmer

"I-AGRI's weather forecasts have made it much easier to protect my crops. [And] I-AGRI's crop advisories are excellent. I have learnt a lot. My tomato plants are lasting longer now because I know the right fertilisers and medicines for them."
- Mangesh Wakte, farmer

Benefits of I-AGRI service



I-AGRI is estimated to have generated up to \$2-3 billion additional income for farmers while over 50 per cent of farmers have reported reduced spending on agricultural inputs.

I-AGRI built a fully integrated business model to create the market

Fully Integrated Business Model



I-AGRI needed to evolve its business model to become sustainable

The three stages of I-AGRI's business model evolution

- ▶ **Phase 1 (2007-2012)**

- **Mobile-based information service for farmers**

- ▶ **Phase 2 (2012-2013)**

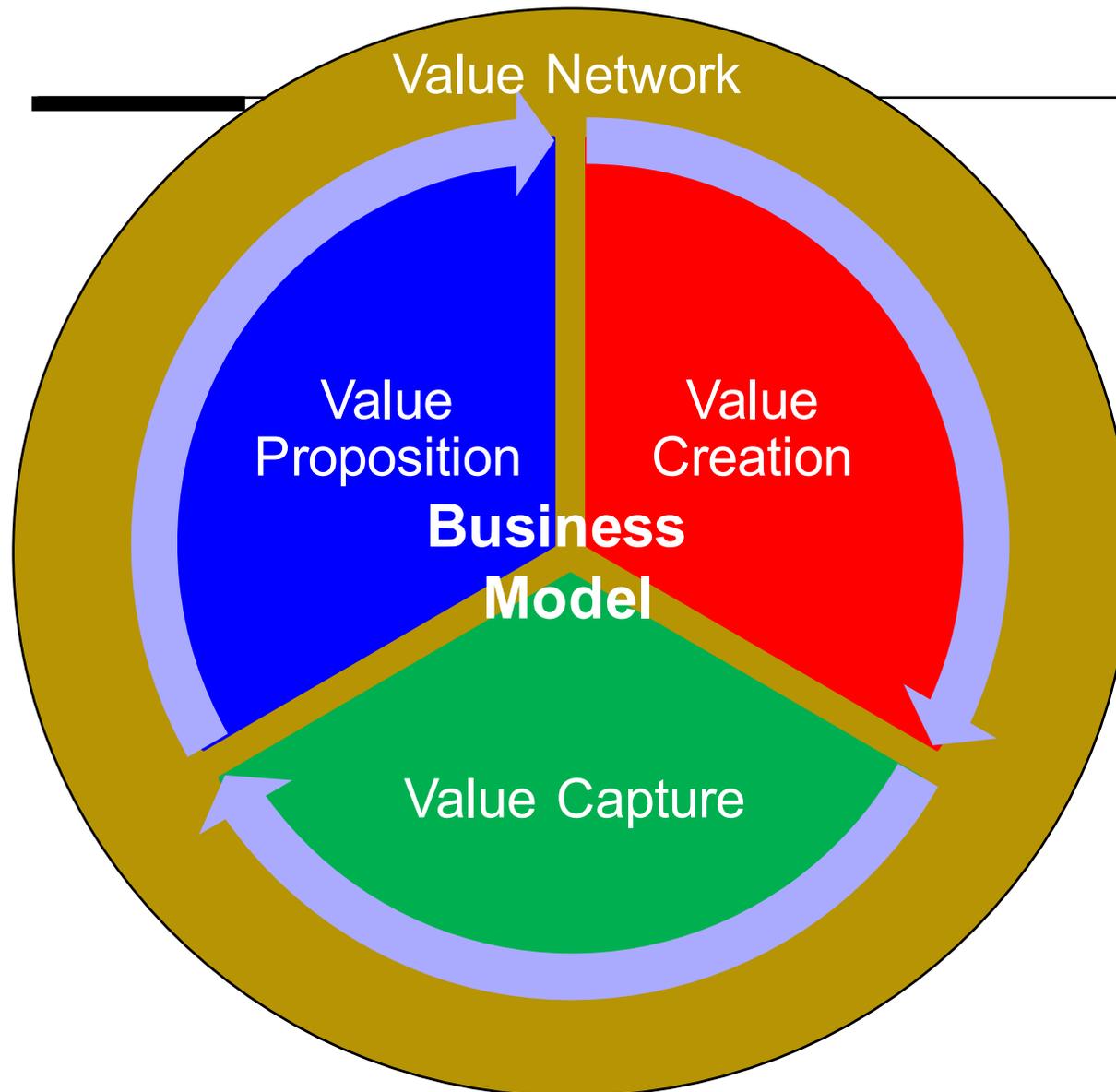
- **Transactions platform for agricultural crops between buyers and sellers**

- ▶ **Phase 3 (2013-2014)**

- **Engagement-based solutions provider for banks and other agricultural-related businesses**

‘What are the organizational capabilities in new firms that enable business model evolution?’

The 4V's of a business model



- ▶ **Cognitive manifestation**
 - mental model of management to understand cause and effect
- ▶ **Economic manifestation**
 - activity system that has economic implications

Systems perspective on business models

- ▶ A system is composed of inter-related parts or elements (Kast and Rosenzweig 1972, Cabera, D., L. Carbera, and E. Powers. 2015; Midgley G. 2003)
 - *distinctions* between components
 - *part and whole* with sub-systems
 - *relationships* between components
 - *perspectives* with different view points
- ▶ A complex system is one made up of a large number of parts that interact in a non-simple way (Simon 1962)
- ▶ General systems theory examines how systems interact with the environment in order to take energy from it and transforms it into an output (Bertalanffy 1950; Katz and Kahn 1978)
- ▶ Analogy with business models as it is a system that
 - has inter-related components
 - converts inputs into valuable outputs for customers

Key findings

- ▶ **Balanced redundancy** – refers to cases where the functions of one element can be performed by another element, either partially or fully.
- ▶ **Requisite variety** – refers to the extent to which components of the system obtain different sources of information in order to understand the environment better.
- ▶ **Cognitive discretion** – refers to the freedom to perceive and construct idiosyncratic meaning.

Phase 1 of I-AGRI's business model evolution

▶ **Phase 1 (2007-2012)**

- **Mobile-based information service for farmers**

▶ **Phase 2 (2012-2013)**

- **Transactions platform for agricultural crops between buyers and sellers**

▶ **Phase 3 (2013-2014)**

- **Engagement-based solutions provider for banks and other agricultural-related businesses**

Lapse in repurchase

Farmers often bought the I-AGRI service for a particular season. Some crops could have several harvesting seasons per year. However, the farmers often did not need the I-AGRI service in between a harvesting season for the crop. Therefore, farmers often needed to be reminded to renew their I-AGRI service in the following season as they often were busy with immediate crop related issues.

Experimentation by stretching resources and building redundancy

- ▶ *'We had among our staff some overlaps in skills. However, we felt that such overlaps in resources are needed in order to be flexible and responsive when it came to experimenting with new models.'*
- ▶ *'We often needed to redeploy resources quickly from one initiative to another as we were experimenting with different propositions. Therefore, having employees who are multi-skilled is very helpful.'*
- ▶ *'We learnt that staff out in the field were happy to spend their free time in the evenings do some extra work which helped them earn some additional income.'*

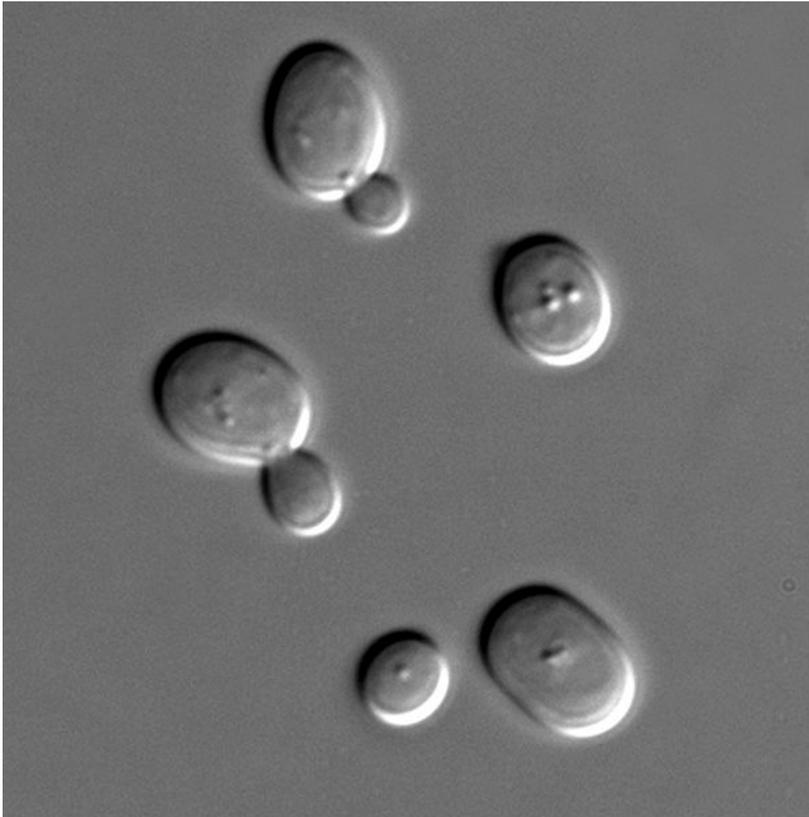
This is managing through resource fungibility

Making cost base variable to match income

The farmer needs a motorbike to go around the farmland. We thought one of the best ways to overcome the lapses in repurchasing the service is to bundle the I-AGRI proposition as part of a motorbike purchase. I-AGRI then gets paid by the motorcycle dealer based on the number of motorbikes sold.

This is managing through resource constraint

Functions of one element can be performed by another element whilst having appropriate constraints



- ▶ Yeast commonly used in making bread
 - displays functional genetic redundancy; partial overlap in the function of genes
 - robust organism
 - evolves as a result of mutations and stresses from the environment
- ▶ On the one hand, redundancy is helpful but needs to be constrained so to minimize excessive resources
- ▶ Balanced redundancy enables distinctions between components to be better leveraged

Phase 2 of I-AGRI's business model evolution

- ▶ **Phase 1 (2007-2012)**

- **Mobile-based information service for farmers**

- ▶ **Phase 2 (2012-2013)**

- **Transactions platform for agricultural crops between buyers and sellers**

- ▶ **Phase 3 (2013-2014)**

- **Engagement-based solutions provider for banks and other agricultural-related businesses**

Farmers did not have sufficient bargaining power

'The farmers who typically purchased motorbikes were farmers with 2–3 acres of land. However, with such a smallholding of crops, they were often unable to get a good price for their crops.'

Understanding details of farmers' purchasing pattern was key...

'The sales team at some of the major fertilizer companies would meet the farmers through the life cycle of the crops and hence were in a good position to provide crop advisory services in order to enhance the sale of fertilizers'.

Such information was coming from varied sources – both internal and external – such as the different distribution channels, call centre and operations, sales and market teams. The intelligence gathered showed that the provision of information alone was not viable

This is developing insights from component knowledge

...whilst appreciating the big picture of the market

'Food security and sustainability is a major issue for the government. Reducing uncertainty of food supply was a critical objective.'

'It dawned upon us that part of the problem with food security is the imbalance between the demand and supply of commodities. Therefore, we felt that if we were to provide a means of aggregating the supply and demand and enable trading in commodities this would go some way in resolving the issue.'

This is developing insights from architectural knowledge

Obtaining information from multiple sources

Component knowledge



Architectural knowledge



Requisite variety enables better balance between specialization and broad scope to understand the relationships between components

Source: Orton, J.D., Weick, K.E., 1990. Loosely Coupled Systems: A Reconceptualization. *Academy of Management Review* 15 (2) 203–223.

Phase 3 of I-AGRI's business model evolution

- ▶ **Phase 1 (2007-2012)**

- **Mobile-based information service for farmers**

- ▶ **Phase 2 (2012-2013)**

- **Transactions platform for agricultural crops between buyers and sellers**

- ▶ **Phase 3 (2013-2014)**

- **An engagement-based solutions provider for banks and other agricultural-related businesses**

From antibiotic to vitamin

- ▶ Merely selling information was insufficient to make the business sustainable
- ▶ Transactions platform was not sufficient to drive up revenues
- ▶ Provide information to banks to reduce credit and marketing costs for the them

Farmers were trying to seek solutions deductively

'As we were often limited to 140 characters on an SMS text we would use abbreviations in the text messages to the farmers. For example, we would send a text about the use of water for plants as H2O. Farmers would often come back to us asking what is H2O and we would explain that it is meant to be short-hand for water. The farmers would then ask what kind of water – is it Kinley or Bisleri (branded bottled water). Once we have answered that they will then ask where they can buy the water from and we would provide advice on that as well. This process would continue to its logical end where the farmer needs to buy the seeds but needs a loan to do so and hence, we needed to provide advice on where to get the loans from.'

This is the means of finding solutions using deductive logic

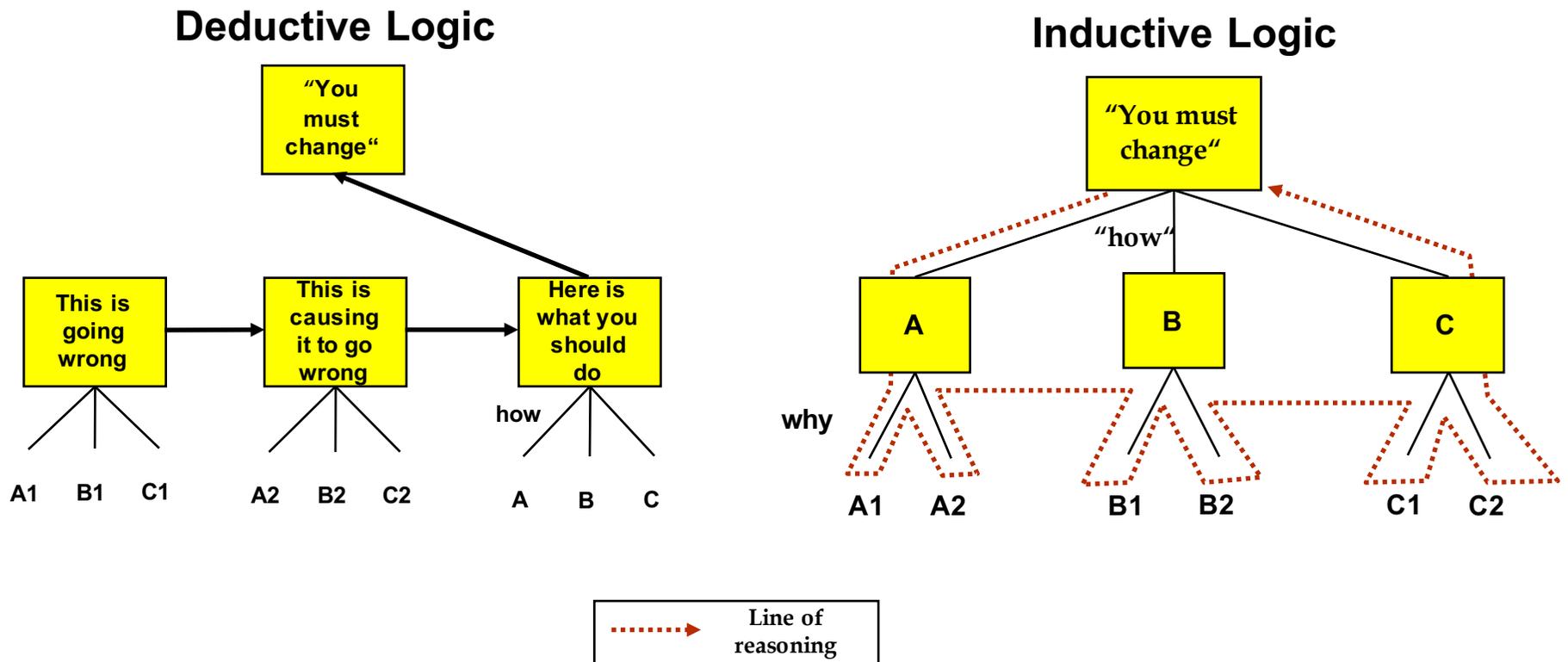
Board used analogies from other industries to develop freemium model

‘It was clear that we needed a new business model. However, our challenge was to change the mindset of the team to look beyond a business model based on selling information and transactions. We had many discussions in the Board meetings about other related businesses such as Netflix, Google, Apple and other information-intensive business models’.

‘We needed to reduce the price of providing the information to zero to attract customers in order to generate revenue from other sources’

This is the means of finding solutions using inductive logic

Freedom to perceive and construct an idiosyncratic meaning



Cognitive discretion by combining deductive and inductive logic enables changes in perspectives

Source: Orton, J.D., Weick, K.E., 1990. Loosely Coupled Systems: A Reconceptualization. Academy of Management Review 15 (2) 203–223.

Key findings

- ▶ **Balanced redundancy** – refers to cases where the functions of one element can be performed by another element, either partially or fully
 - *Resource fungibility vs Resource constraint (Distinctions)*
- ▶ **Requisite variety** – refers to the extent to which components of the system obtain different sources of information in order to understand the environment better.
 - *Component knowledge vs Architectural knowledge (Part-whole and Relationships)*
- ▶ **Cognitive discretion** – refers to the freedom to perceive and construct idiosyncratic meaning
 - *Deductive logic vs Inductive knowledge (Perspectives)*

Summary

- ▶ Developing organizational capabilities based on systems thinking helps business model evolution
- ▶ Micro-foundation of dynamic capabilities
 - Balanced redundancy
 - Requisite variety
 - Cognitive discretion
- ▶ Early exploration of the systems thinking for business model evolution

THANK YOU

Forthcoming webinars

Date 14:30hr BST	Topic	Invited speaker
2017		
June 12 th	Exploring the Service Journey	Veronica Martinez
July 10 th	Business Ecosystems: Towards a Classification Model	Florian Urmetzer
Sept 11 th	Bridging the Co-creation Gap between Co-creators, Companies and Living Lab	Katherina Greve
Oct 2 nd	Barriers and Facilitators to Incident Reporting in Servitized Manufacturers	Chara Makri
Nov 13 th	A systems perspective on business model evolution	Chander Velu
Dec 12th	Using outcome-oriented contracts to foster performance improvements in logistics outsourcing relationships	Torsten Steinbach, Florian Urmetzer