

Using IS Theory in Practice

Working with Literature: Part II

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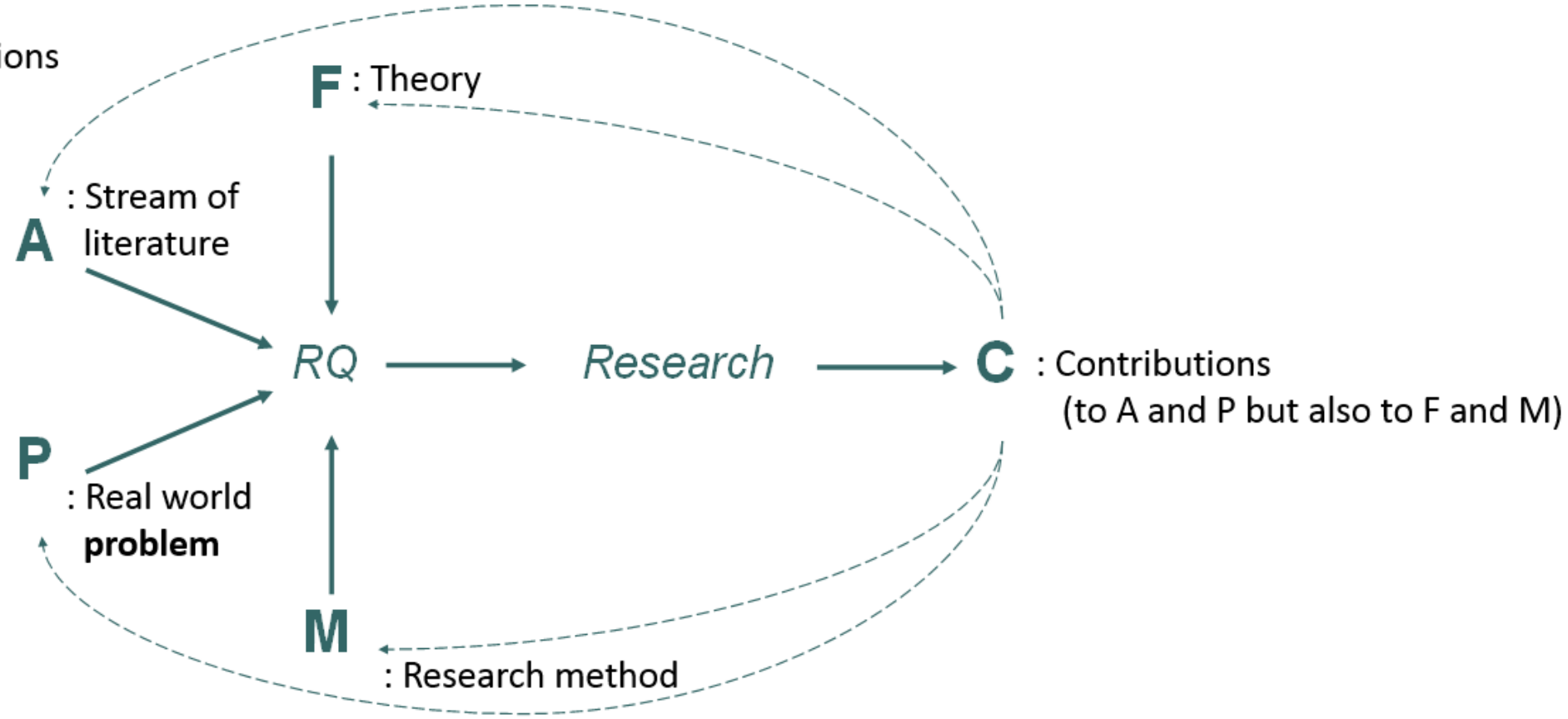
Terje's PhD – an example

Grafting Information Infrastructure

Mobile Phone-based Health Information System Implementations in India and Malawi

Theory in a master thesis project

- **A** area of concern
- **P** real-world problem
- **F** framing
- **M** method
- **C** contributions



Two studies of mobile phone-based health data reporting

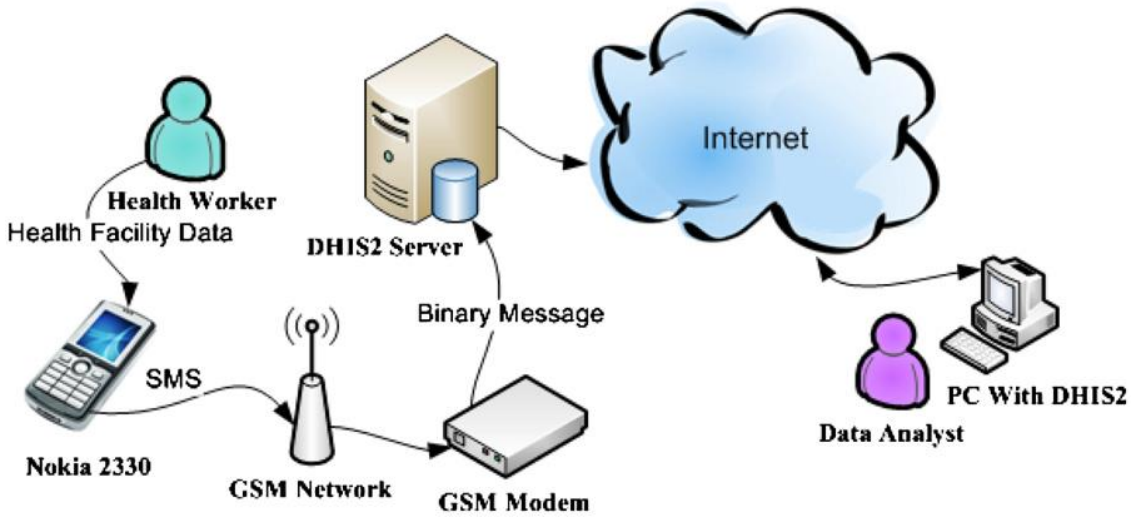


India, Punjab **«big bang roll-out»**

- from pilot (200) to 5000 health workers reporting using compressed SMS

Malawi, Lilongwe **«baby steps»**

- from pilot (17) to 44 health facilities reporting using mobile-web /mobile data



Similar **use case** of **reporting accurate and timely data**, but different size, communication infrastructure, financial resources, culture and politics

Punjab (India)









Lilongwe (Malawi)









Real World Problem: Sustainability beyond the ICT4D project

It's about **people** (e.g., health workers, managers),

their **institutions** (e.g., funding arrangements),

extant **infrastructure and information systems**,

Capacity building / training

and buy-in from stakeholders











Area of concern: information infrastructure

Key debate: information infrastructure development / innovation

«bricolage»

«installed base cultivation»

Information infrastructure is **developed** and maintained in a dynamic, **distributed** and **episodic** manner by a **multiplicity** of **stakeholders** with diverse interests and aspirations
(Aanestad and Jensen 2011, Star 1999, Hepso, Monteiro and Rolland 2009)



«bootstrapping»



*What is missing [conceptually] is a bridge between what we understand as deliberate efforts to '**build**' or **extend information infrastructure**, usually conceptualized by drawing on **mechanical metaphors** ('**layers**', '**gateways**' and '**modules**'), and what we see as an evolving and unmanageable whole, more commonly portrayed as "cultivation"*

Theory “lens”: grafting (from horticulture)



Information infrastructure development as *grafting*

"[a process whereby] *organizational goal-oriented information system innovations merge with and extend existing socio-technical arrangements so that the parts continue to grow*" [as one] (Sanner et al., 2014, p. 225)



Mango grafting

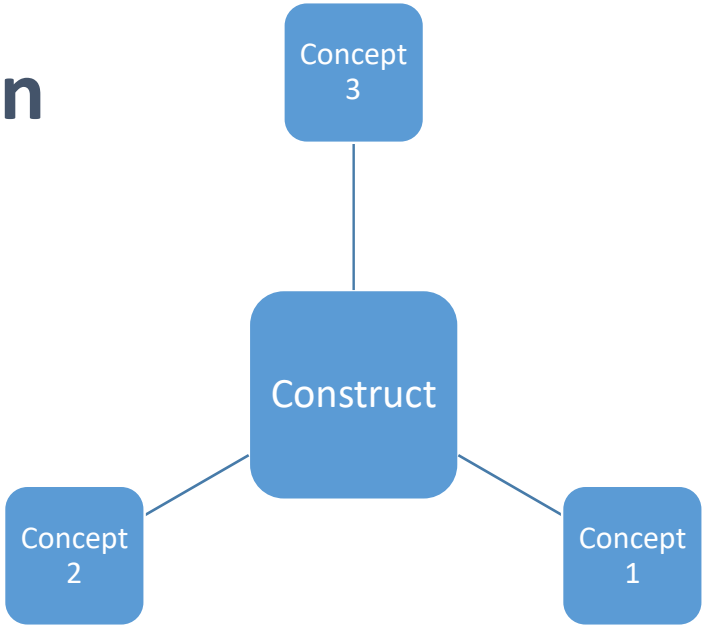


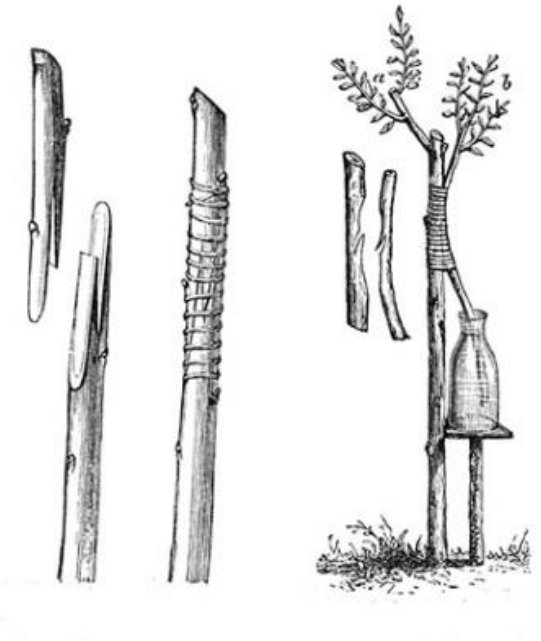
Propagation technique – veneer grafting



Grafted avocado seedlings

From ICT project to information infrastructure development - four *grafting* concepts





i) Early socio-technical arrangements i.e. the ***point of union*** may have long-term, even irreversible implications (e.g., after pilot project scale-up)

ii) ***Congeniality*** (bi-directional malleability) characterizes the sustainability of novel ICT capabilities in the context of information infrastructure development

iii) Information infrastructure innovations are ***fragile*** and rely on ownership from a growing network of, often previously uncoordinated, stakeholders

iv) Successful ICT capabilities may ***propagate*** *(functional, spatial, domain)*