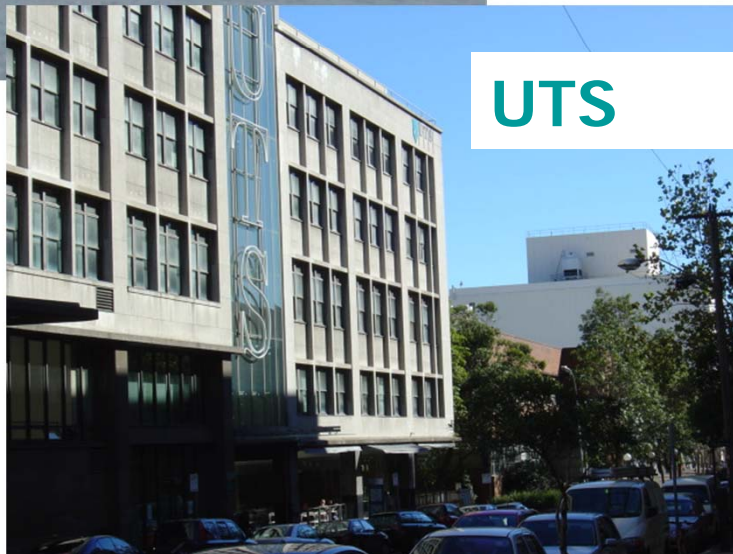


Developing support system for multi perspective design



Sydney



UTS

Motivation

Motivation

Architecture

Using cloud and Web 2.0

Multi perspective method

Future possibilities

Agents and structured communities

Summary

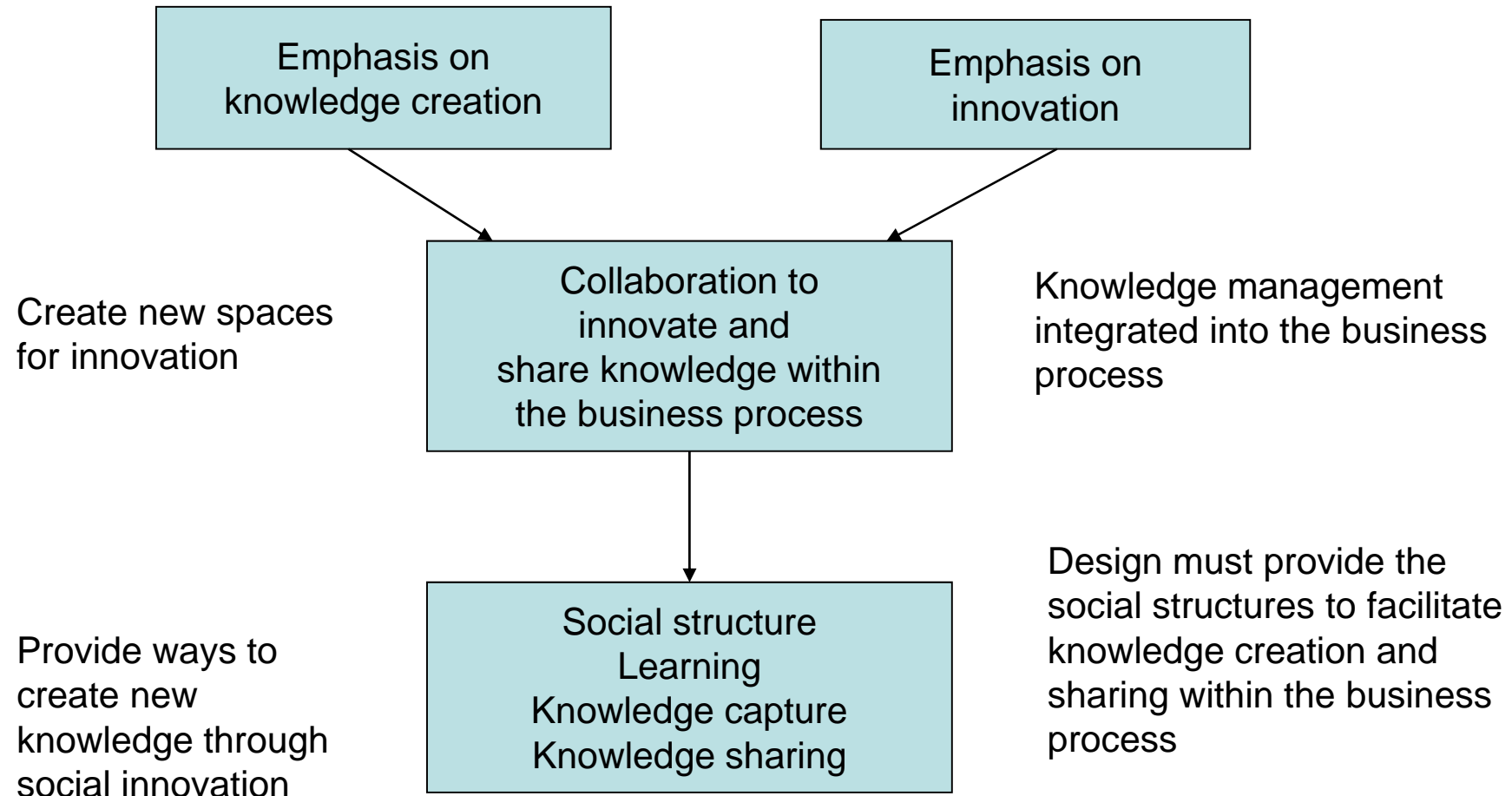
Trends in networked systems

There is more emphasis on collaboration in networking – going from collaboration in the small to collaboration in the large

Work is now becoming more complex and marches must often be made across organizations

How to make collaboration sustainable

The challenge of complexity in the business environment



The goal is to develop a methodology to support systems in complex environments

Trends to Large Scale Collaboration

Difficult to...

Policy formulation

Strategic Planning

Community and network support

“Ta...
Public...ve

Requires holistic thinking

Have ways to knock out bad ideas

Systematic approaches to social innovation

Work

Supportive structures and p...

Facilitate information management and sharing

Encourage initiative and recognize the need for learning

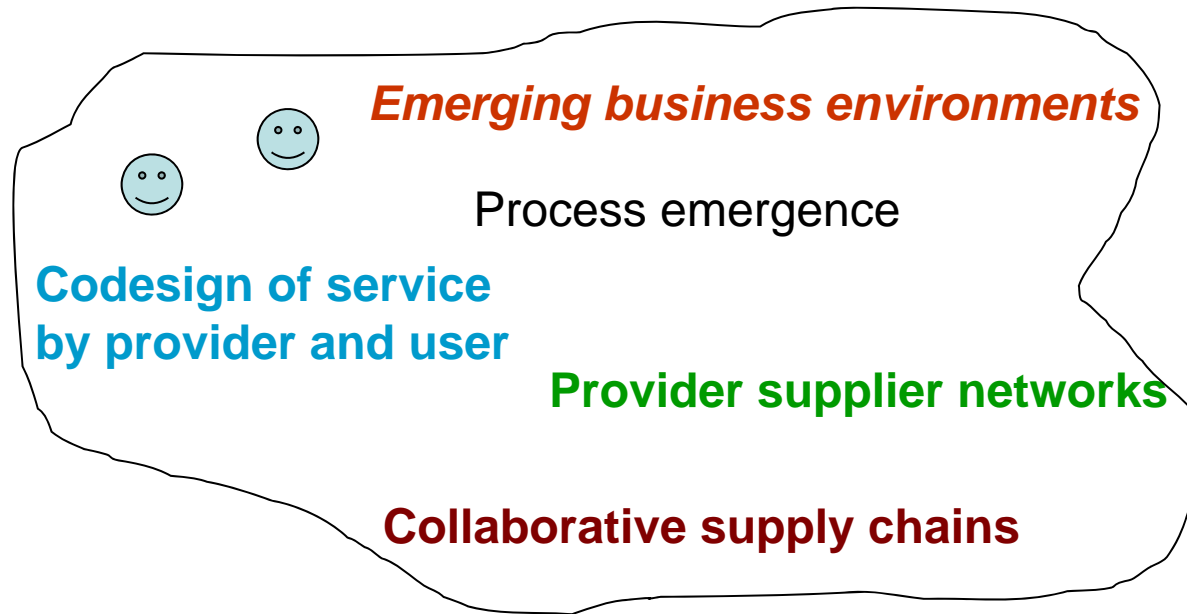
Aging Population

Sustainability issues

Obesity

Growing complexity in the business environment

System of systems

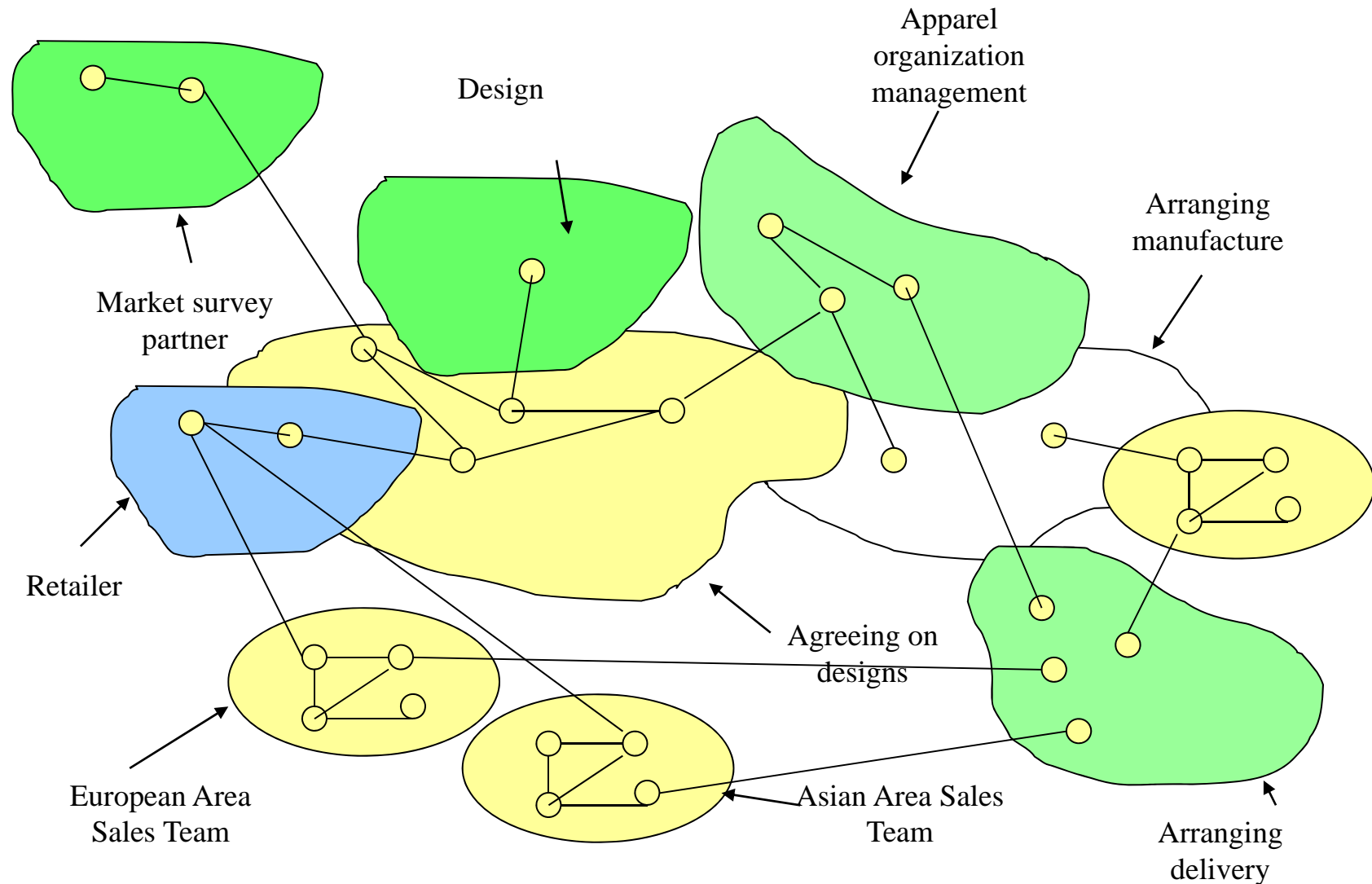


Emphasis on knowledge creation

Emphasis on innovation

Greater need to adapt to changes in the environment

Social networking – loosely structured communities



Trends in large scale collaboration

From loosely structured
communities

**Use complexity as a guideline to
gather requirements and design
flexible platforms**

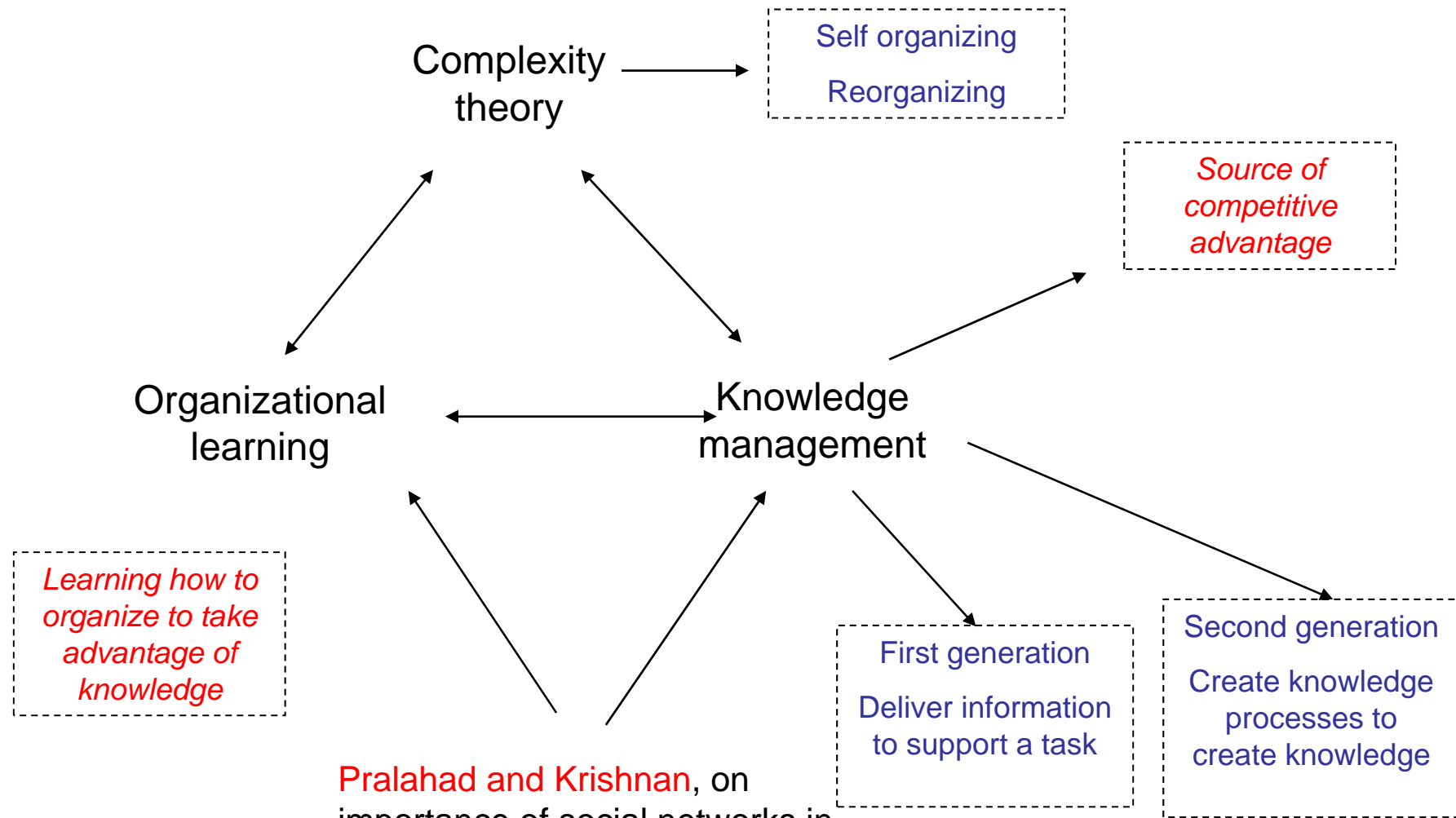
**Away from
supporting tasks**

**Improve flow of knowledge
Facilitate collaboration and
innovation**

Managed communities

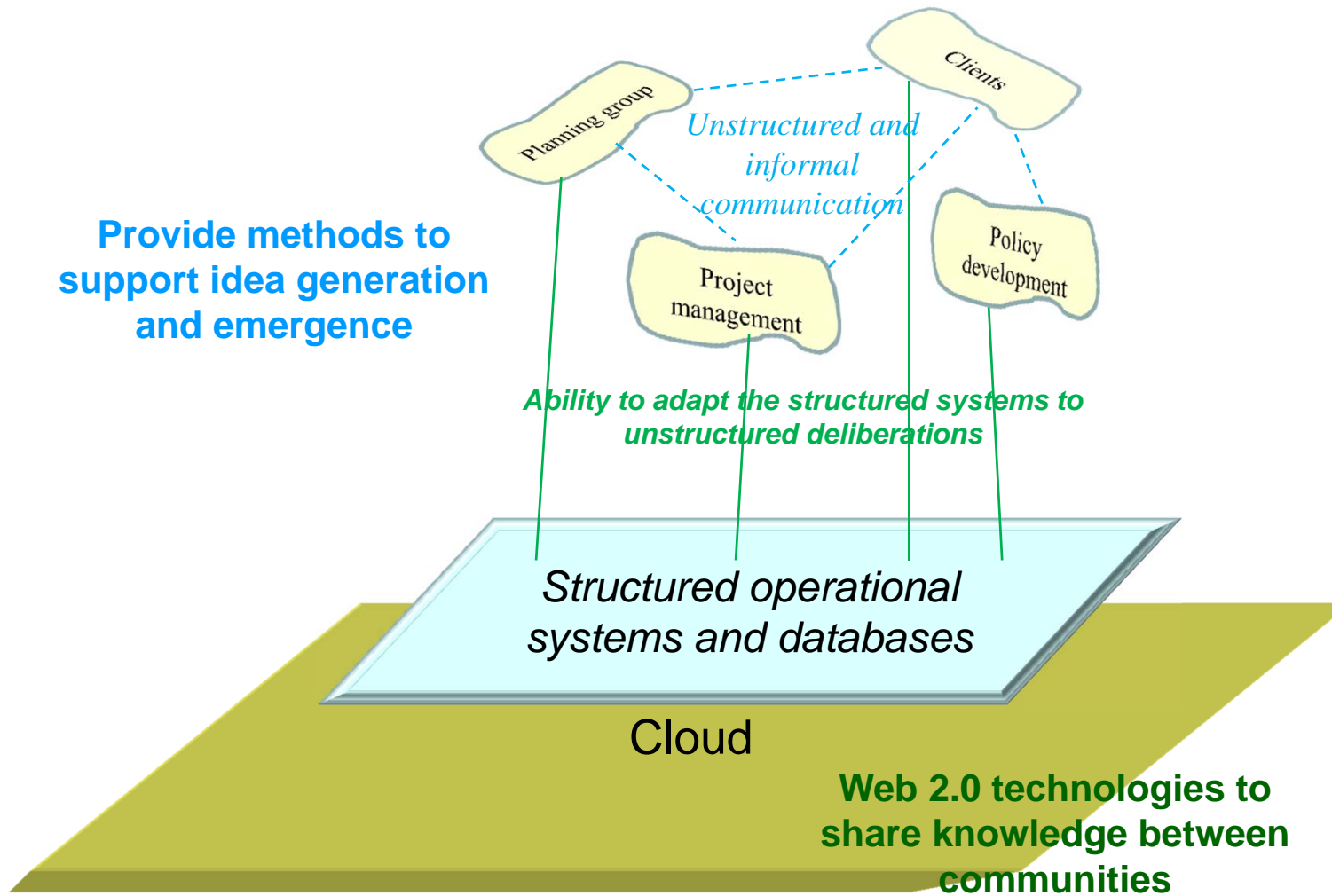


Systems must manage complexity



Pralahad and Krishnan, on importance of social networks in innovation

Goal: Support Ensemble of communities



MelCa Overview 1: Main Objective

Focusing on large scale collaboration to support knowledge sharing and collaboration

Managing in complex environments
Bringing together people and knowledge to address emerging issues

New approach to requirements capture for complex evolving systems – Incomplete and emerging requirements

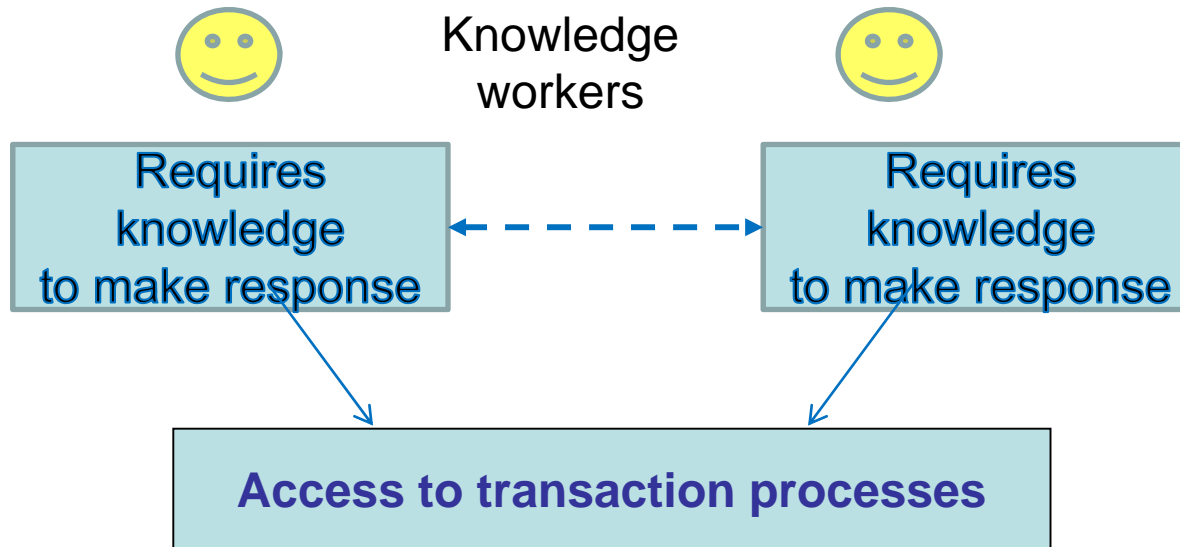
Managing community sustainability within the business system

Creating new relationships as system emerges

User driven emergence

Ultimate goal – User operates on model with changes made on system

Overview 2: Who is the User



IT Architect providing the infrastructure

Provide foundation for evolution
Manage complexity

User process driven by events that need responses

User managing process emergence

Infrastructure to support user driven evolution

Overview 3: Encouraging emergence and innovation

Improving quality

Changing model during execution

Supporting emergence through

Learning

Relationships

Feedback

Control elements

Methods are needed to provide the structures that encourage innovative behaviour.

Overview 4: Use a “method engineering” approach

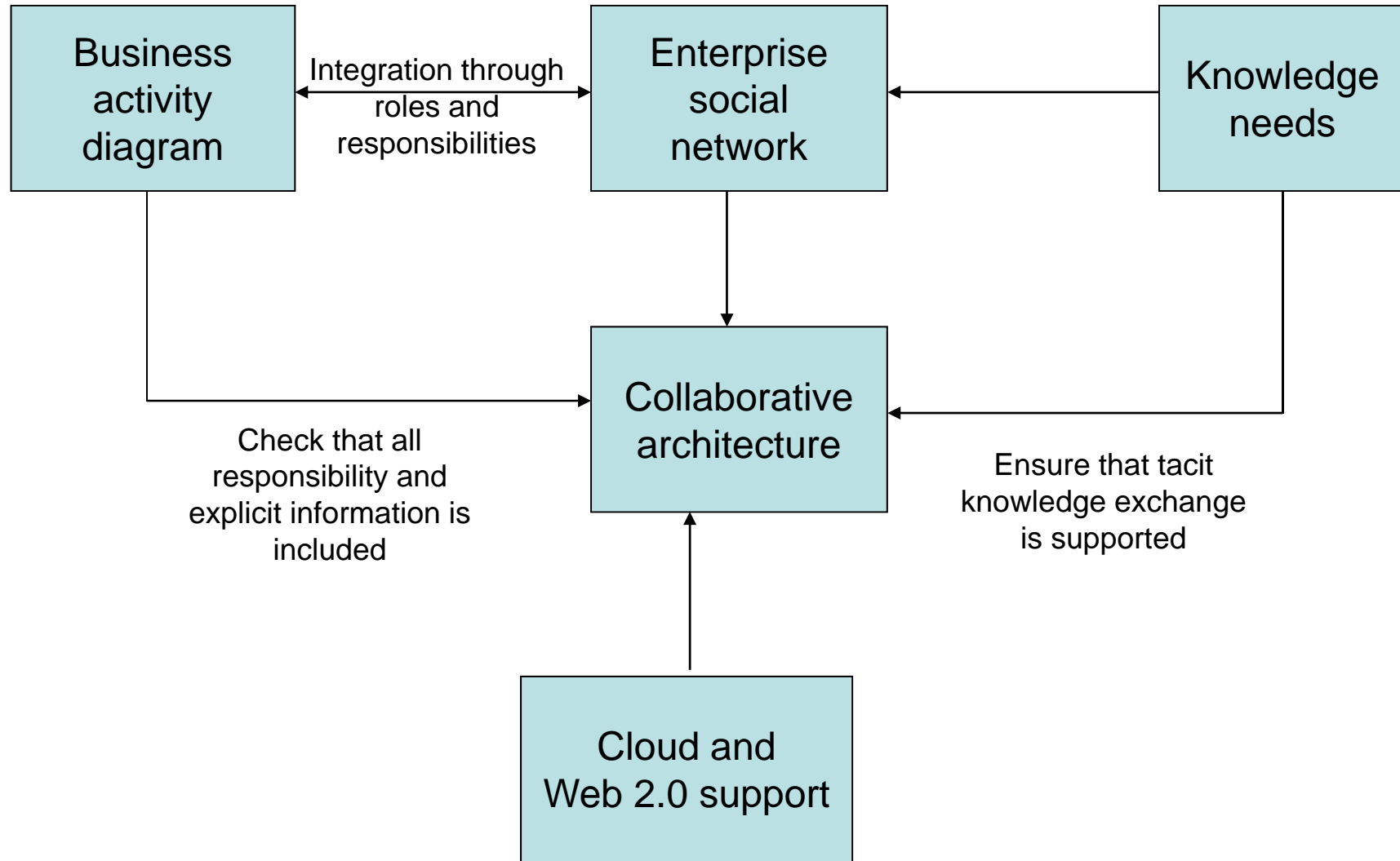
Select perspectives

Select method for defining perspectives

Select modeling tools for each perspective

Select analysis method

Perspectives to better understand complexity



Open model platform

Current open model platform as I understand it

Each concept of a proposed model is defined as an object in the open platform to create a **metamodel**

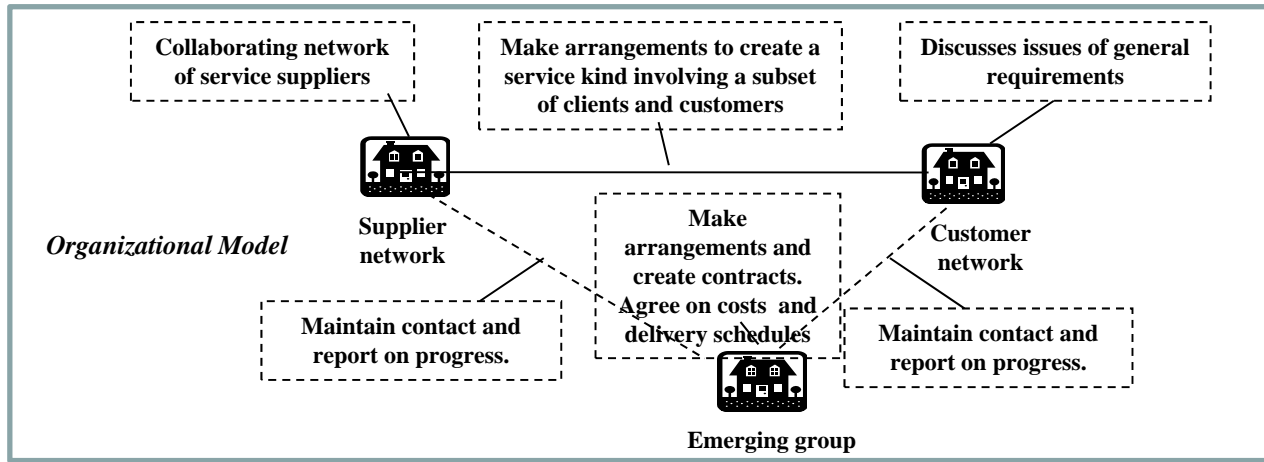
Relationships between conceptual objects are defined as part of the metamodel

Open model system interprets the stored metamodel definition to assist users to create schema definitions (or define business architectures) of applications

Questions

Is the meta model used to create schema (or business architecture) for a particular application (What happens to the schema)

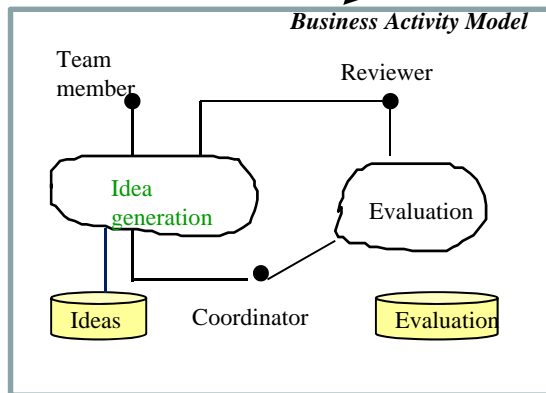
Can the created schema then be used to create (or generate) executable systems



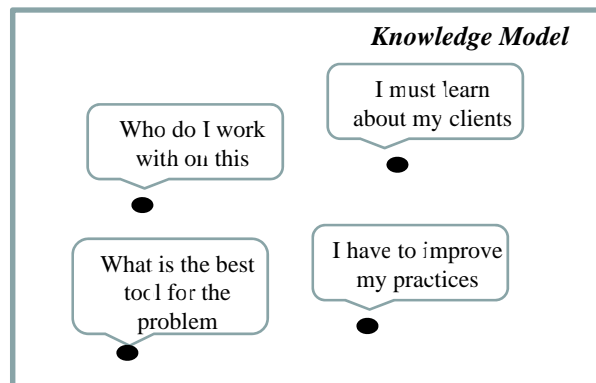
Ways organizational units interact

AN OVERVIEW OF THE CONCEPTS

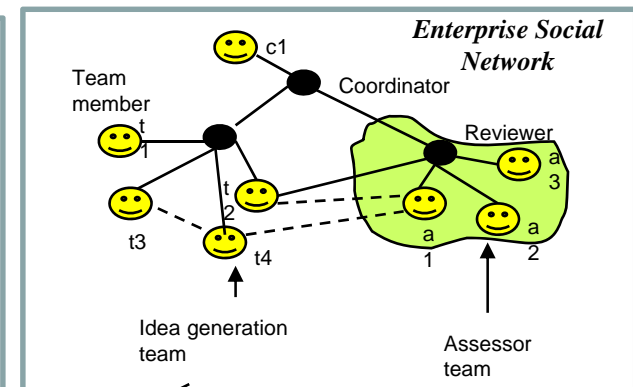
The structure of business activities



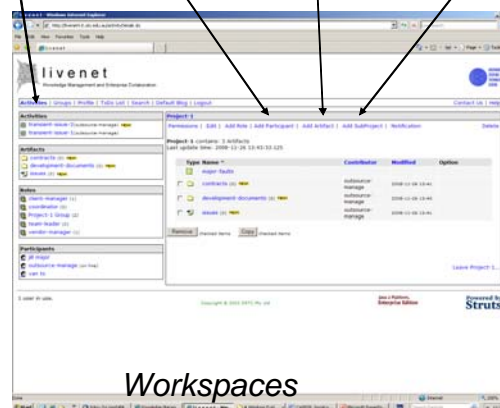
Ways we learn and share knowledge



Ways people interact



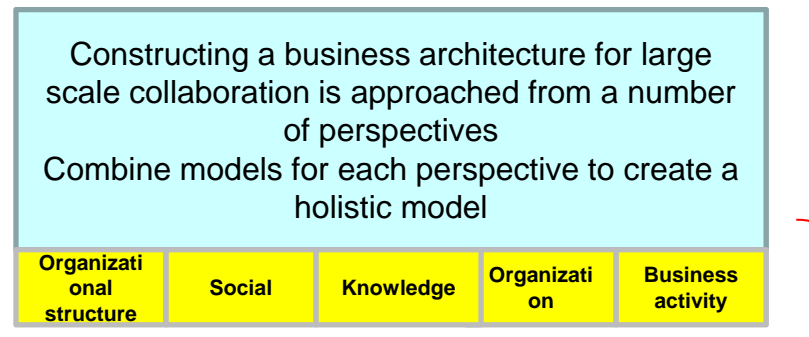
Create new activities Assign new people Add any new artifacts Create new tasks



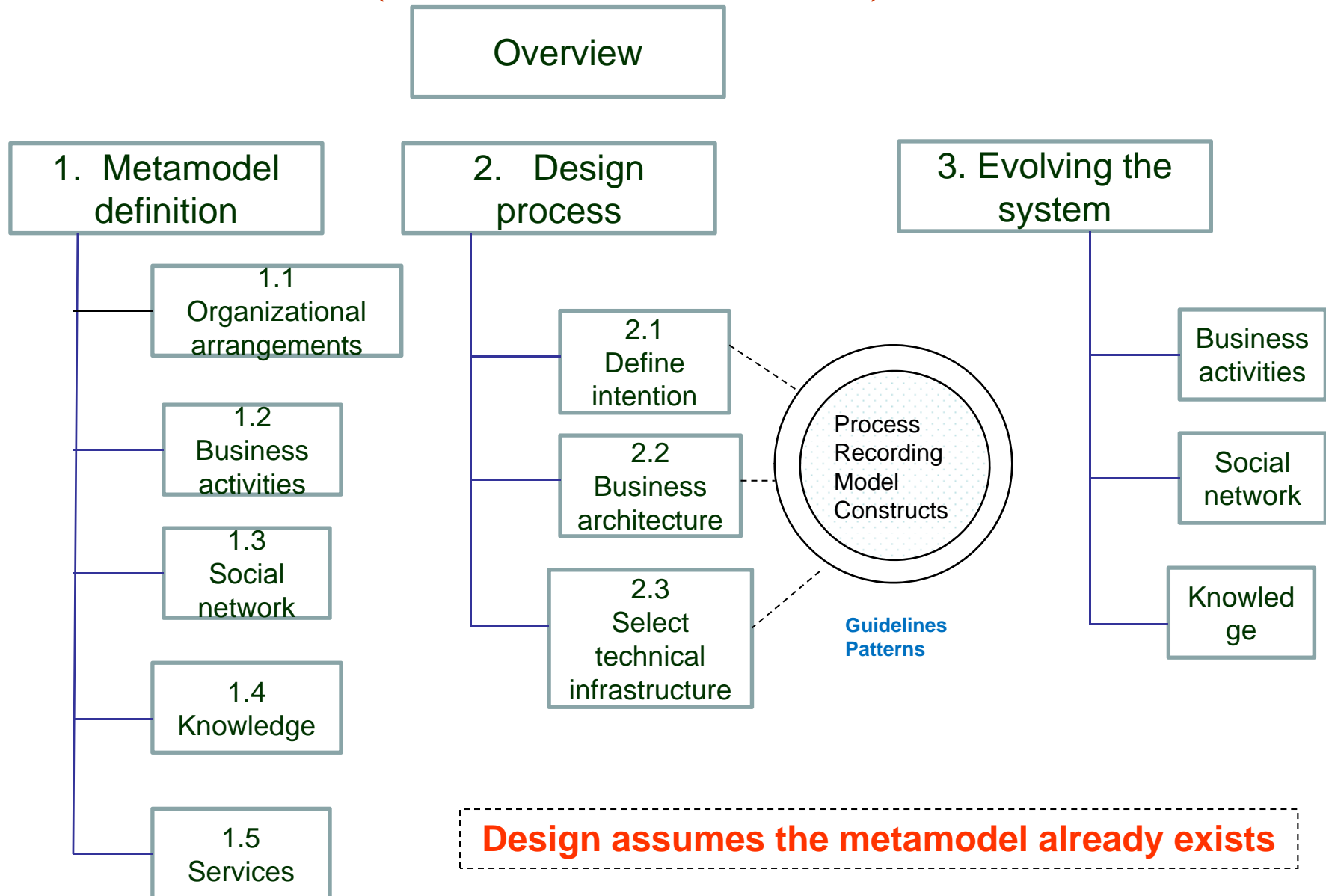
Choosing perspectives and modeling methods

1.0 Proposed MelCa implementation

Defining large collaborative systems requires models that show the interaction between a number of perspectives.

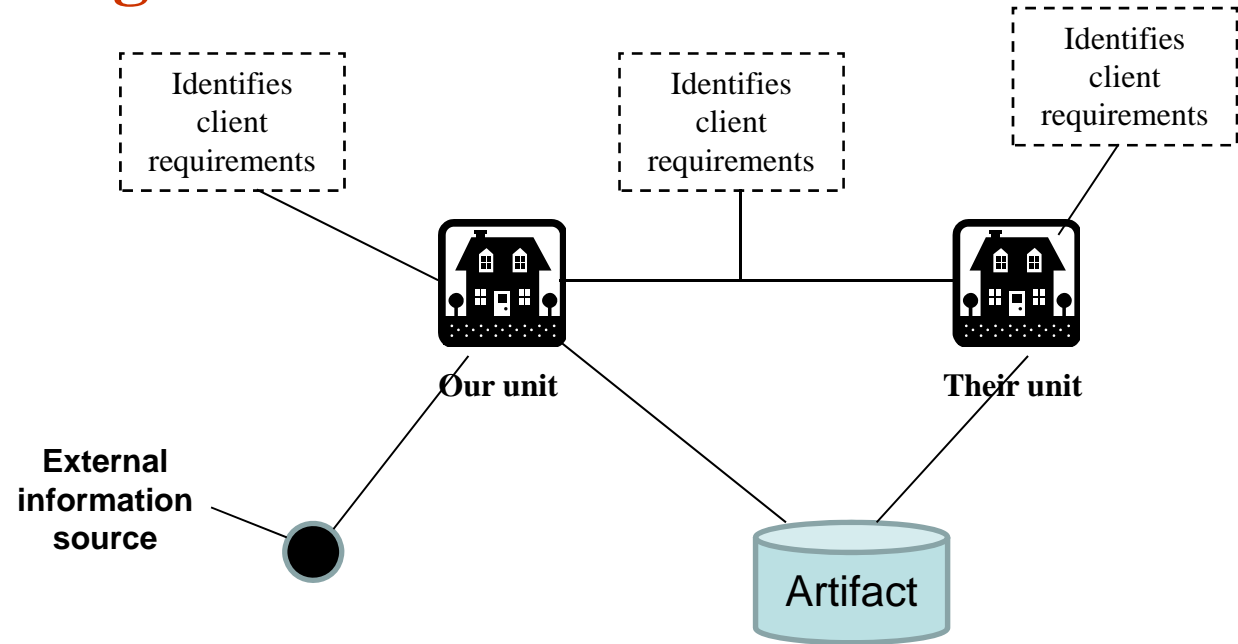


Structure of Method (to create the schema)



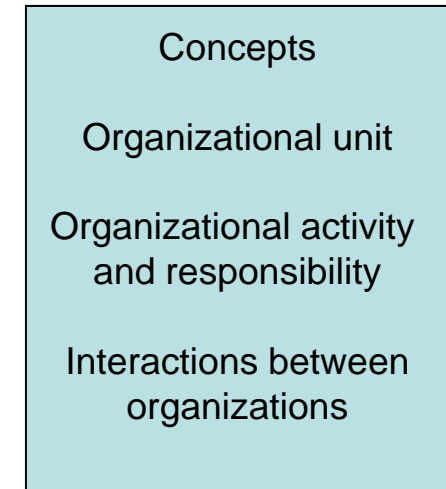
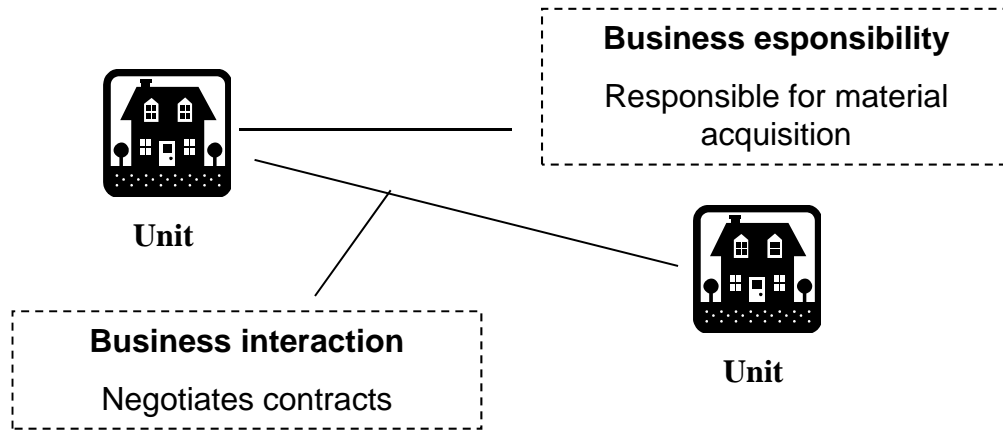
1.1 Organizational Model

Enterprise Relationships
 Role
 Artifact
 Type
 Subactivity/Service
 Scenario

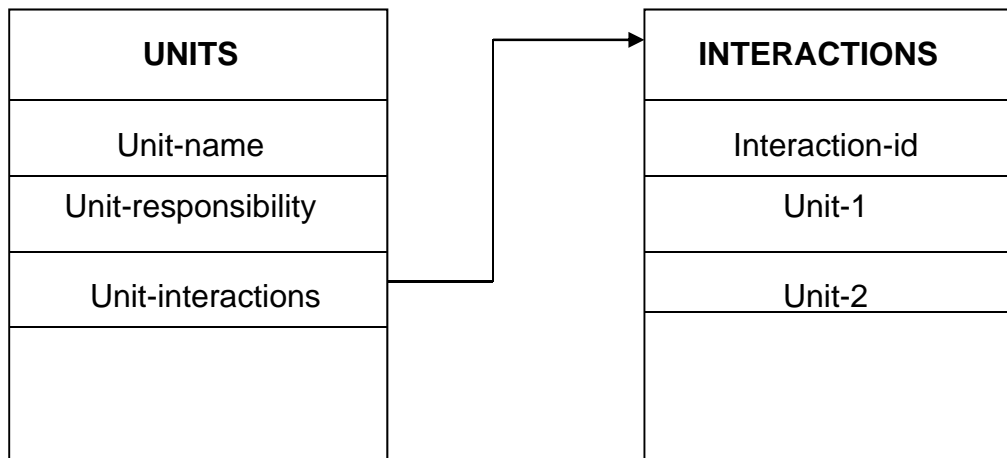


Organizational Unit	Responsibility	Roles and responsibilities	Output artifacts	Artifact dependencies

1.1.1 Choose organizational model

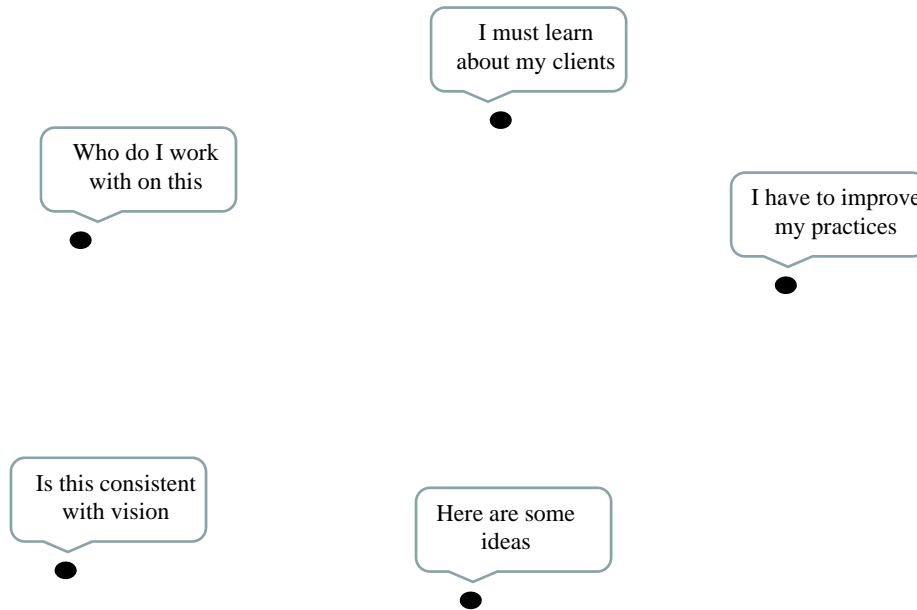


UML Model



1.4 Knowledge Model

Focus on learning, innovation and setting up relationships



Associate knowledge model with all concepts
to provide holistic system

More on linking knowledge throughout model

Defining “knowledge“ for modeling purposes

Domain knowledge

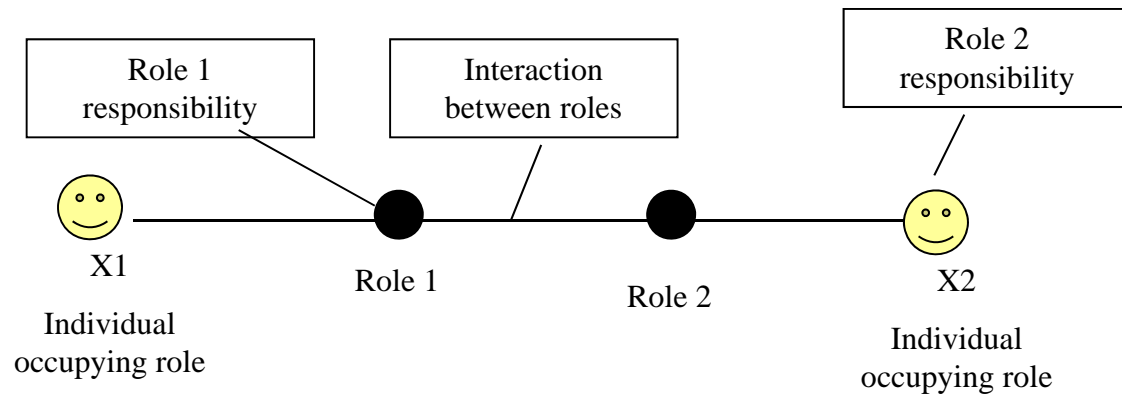
Collaborative knowledge

Link to other objects in the models to support
knowledge sharing

1.5 Enterprise Social Network (ESN)

Options – reactive look at current networking and adapt
 proactive create an ESN

Role
 Responsibility
 Interaction
 Interaction type



Roles	Responsibility	Interaction with	Interaction type	Knowledge created	
Role 1					
Role 2					

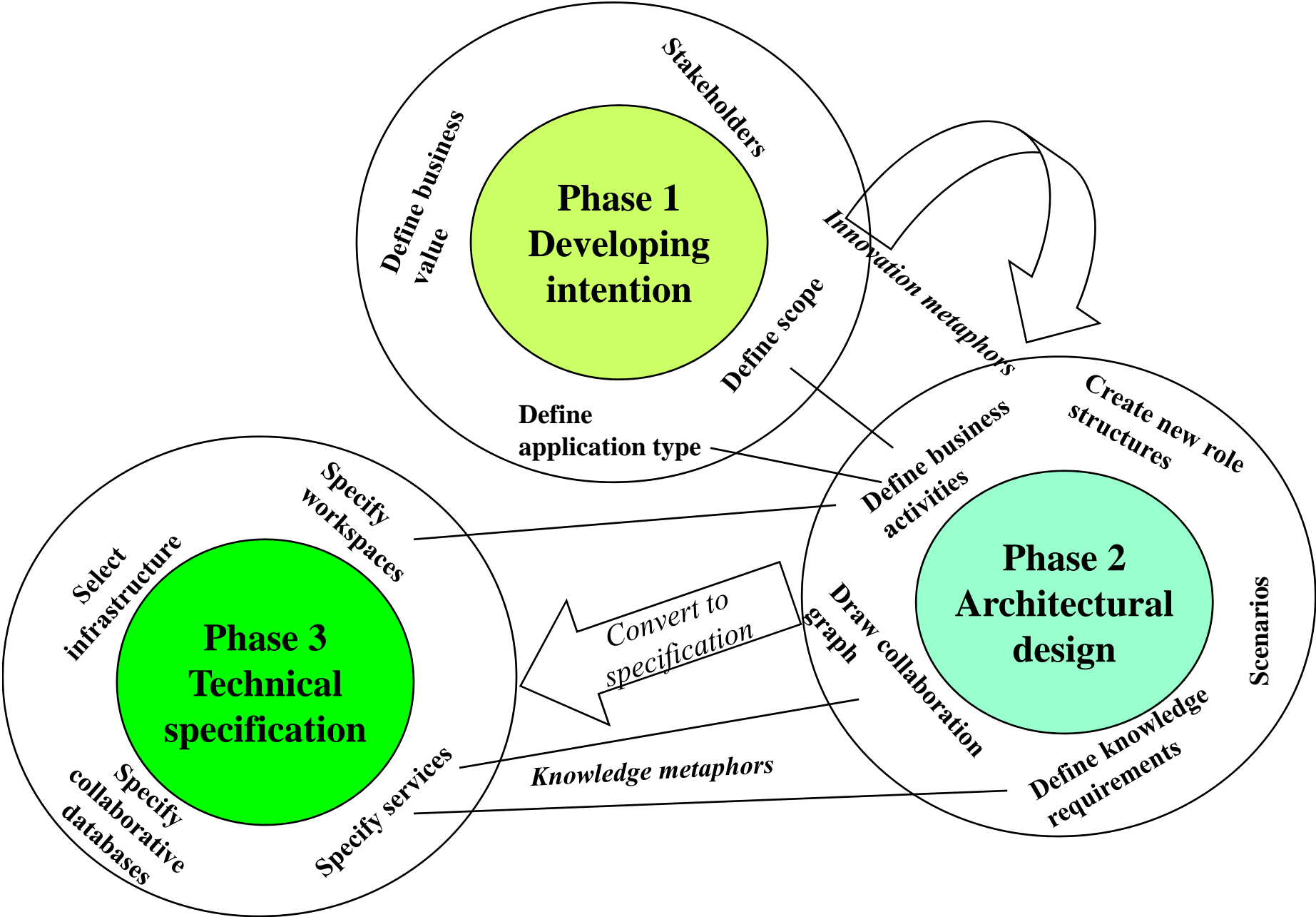
Design process (creating a schema)

Question is whether user needs to know the metamodel
(A good technology is one that you cannot see)

Option 1: Create a model using the metamodel concepts)

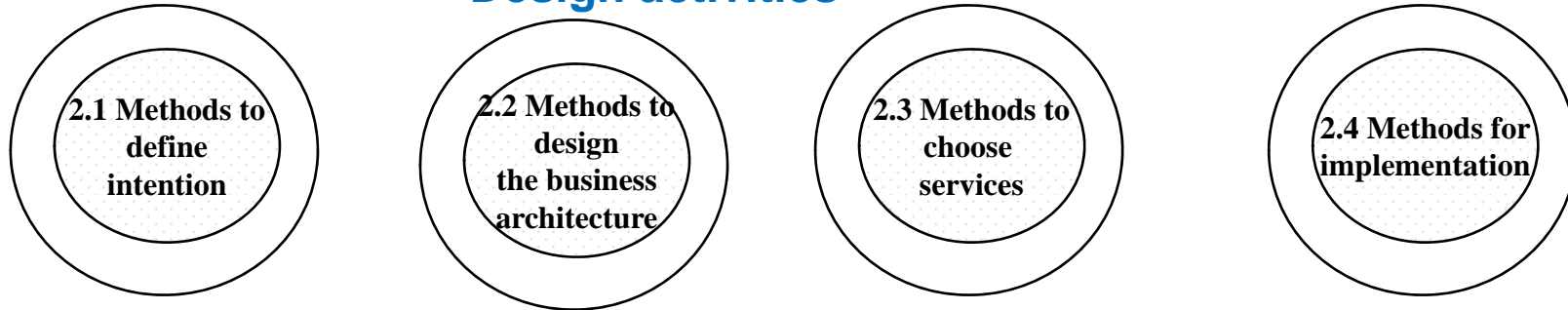
Option 2: Users evolve a design assisted by agents

Option 1: The design process



2.0 Design Process: Overview

Design activities

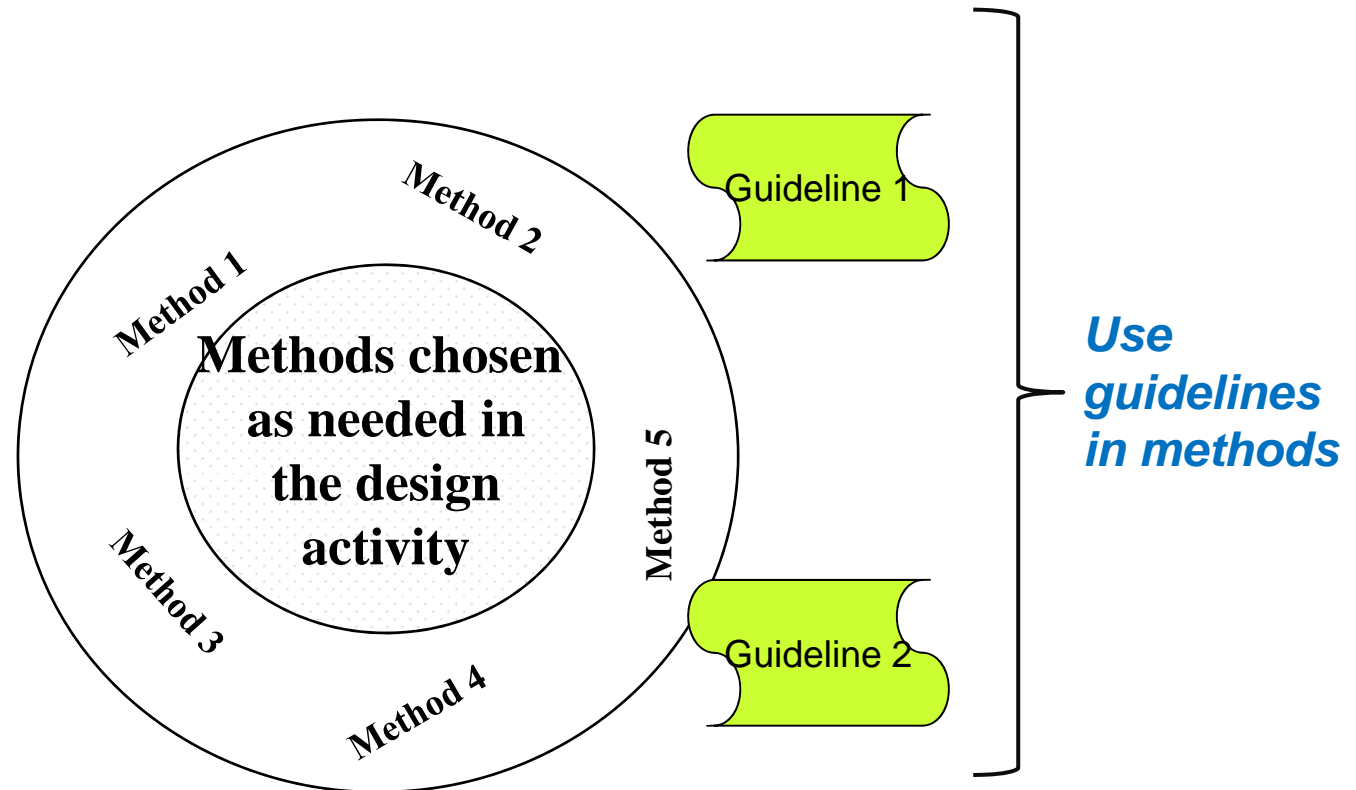


A method oriented approach

Methods classified by stage

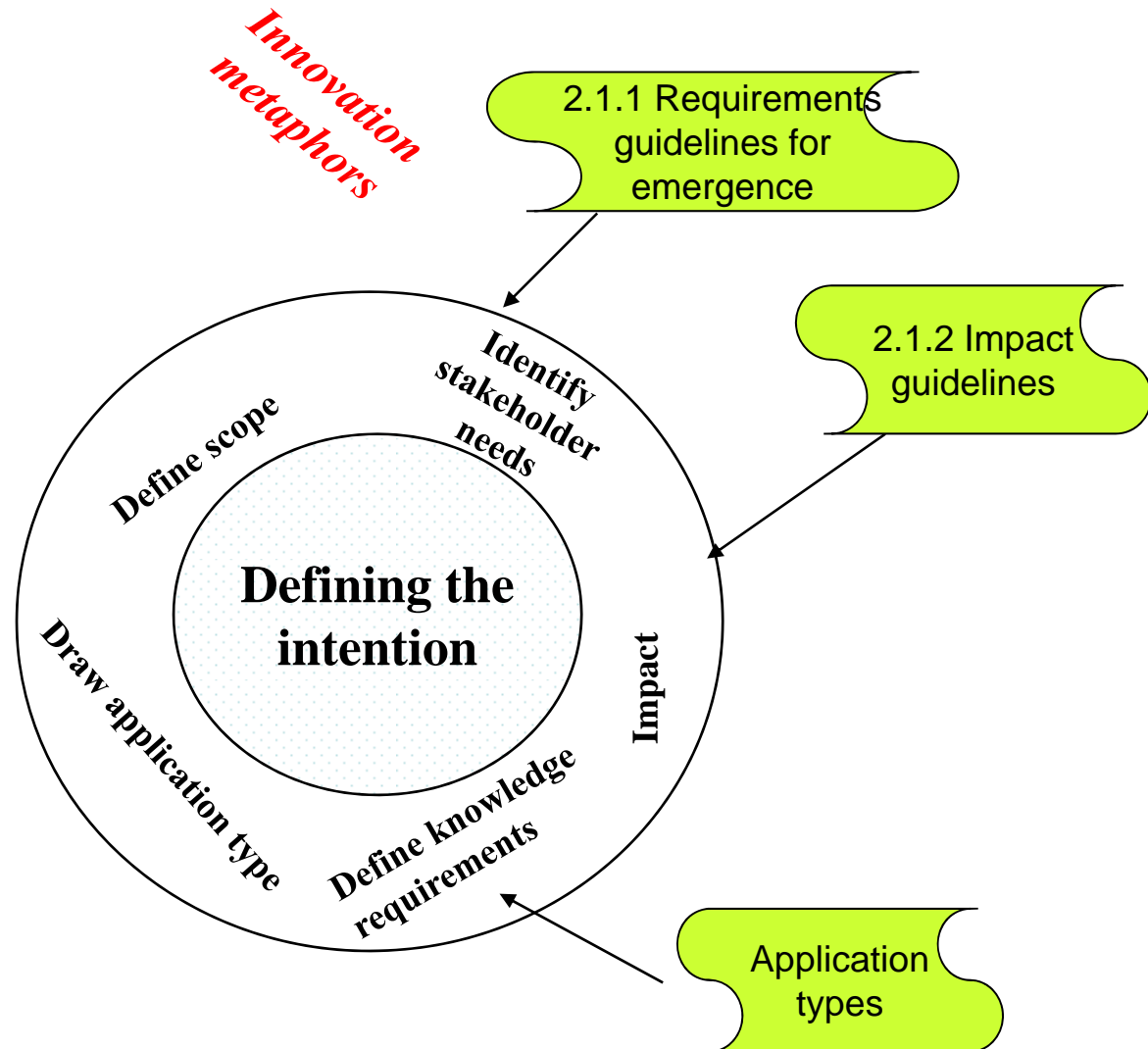
Guidelines provided for each stage

Methods focus on perspectives



2.1 Defining Intentions

Goal	Impact



General infrastructure also identified here?

2.1.1 Process for intentions



Guidelines

Guidelines for identifying trends

Client (society) values
Industry, environment and economic trends
New products likely to emerge
New services

Guidelines for defining emergence

What new knowledge do you expect later
Which way is the industry going
What new skills will be needed

Guidelines for work relationships

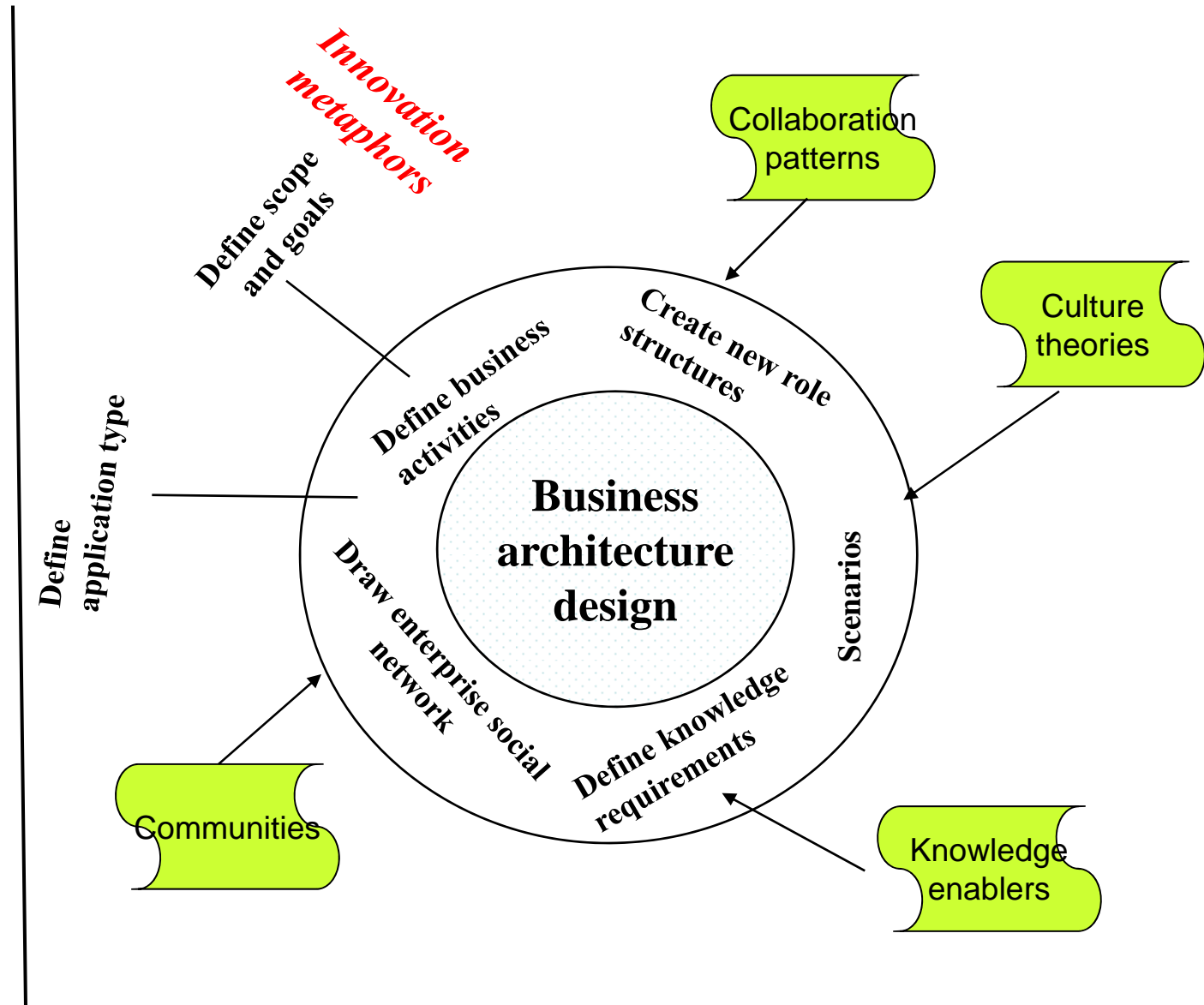
How do you expect to be working with clients,
How do you expect to be interacting with co-workers

Guidelines for organizational units

Depends on industry

2.2 Design methods for business architecture design

Goal	Activity



2.2.1 Identify business activities

Look at goal

↑ What activities – sketch activity

Which activities get trends

↓ How are trends distributed

Where is knowledge captured and created

Which roles are involved in knowledge capture

What needs to be done – choose activity roles

What knowledge is needed and created and expertise developed

What kinds of changes need to be catered for

What are the interactions – sketch ESN

How is coordination between units

What are the process innovations

What services do roles need

Where is the responsibility for change

Guidelines

What are the business activities
What are potential changes

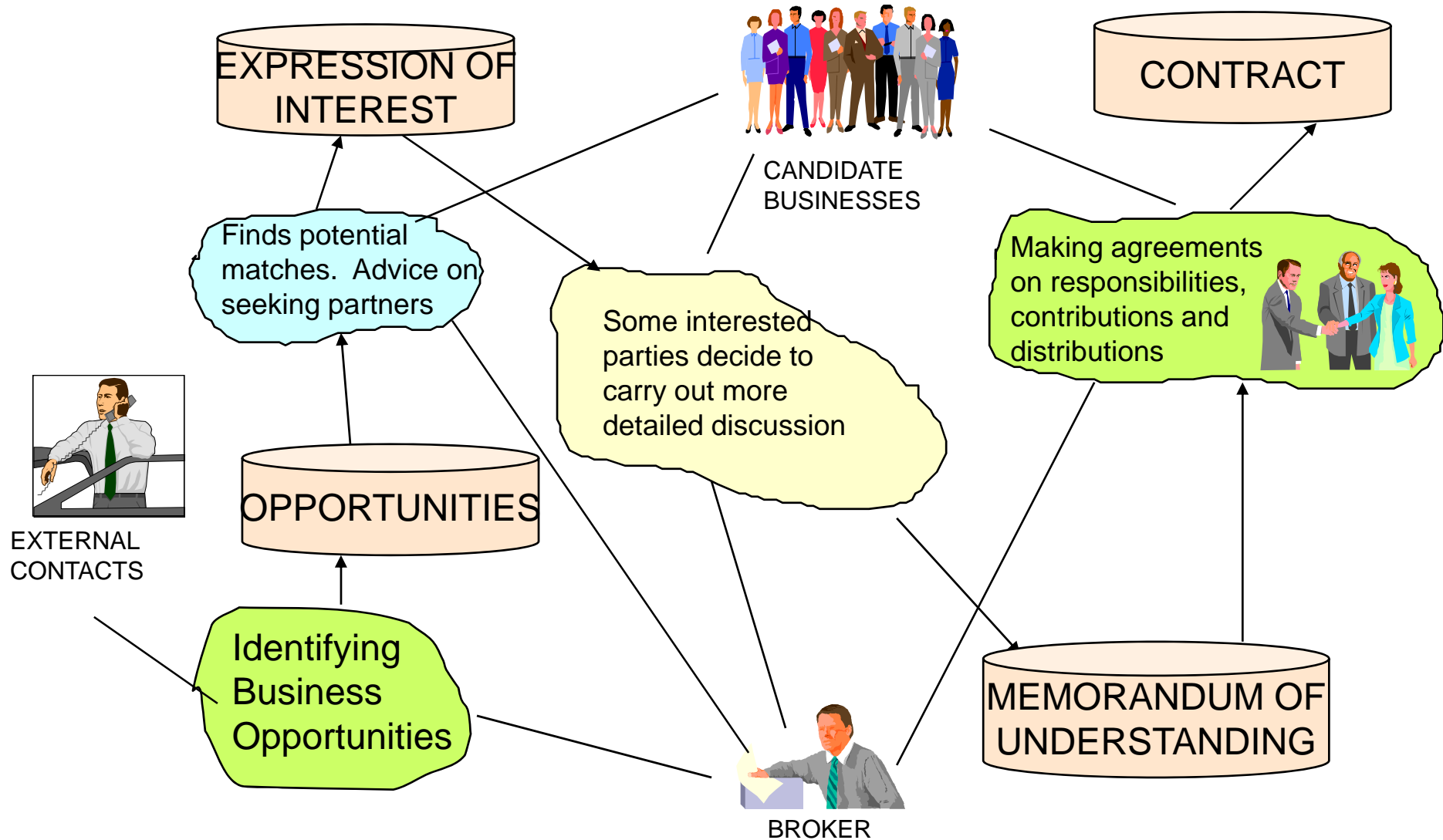
Guidelines for defining emergence

Identify potential directions in knowledge creation.

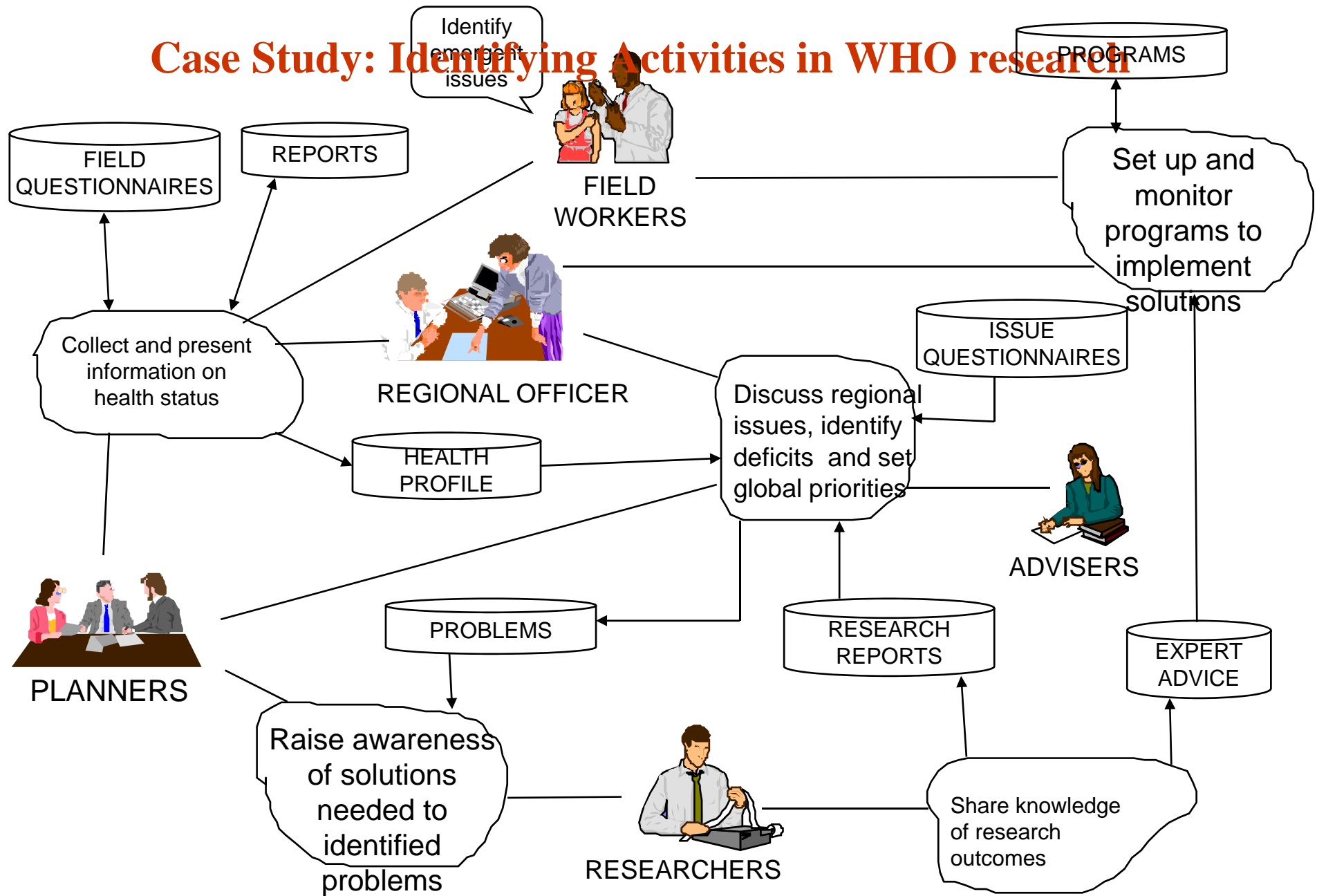
Where does it come from? Does it need to be created?

Choice of ESN structures

Case Study: Business Activities in Business Network Formation

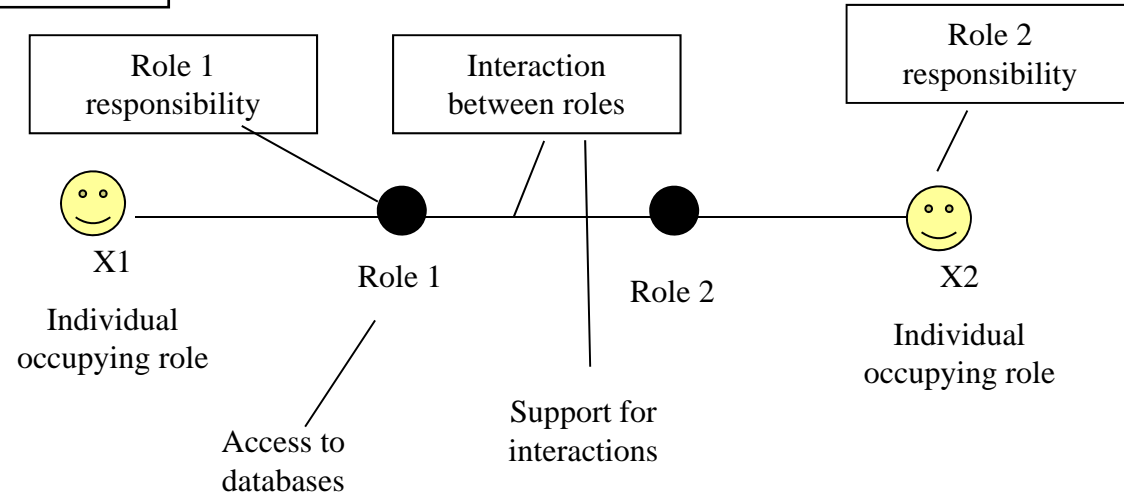


Case Study: Identifying Activities in WHO research



2.3 Service Description

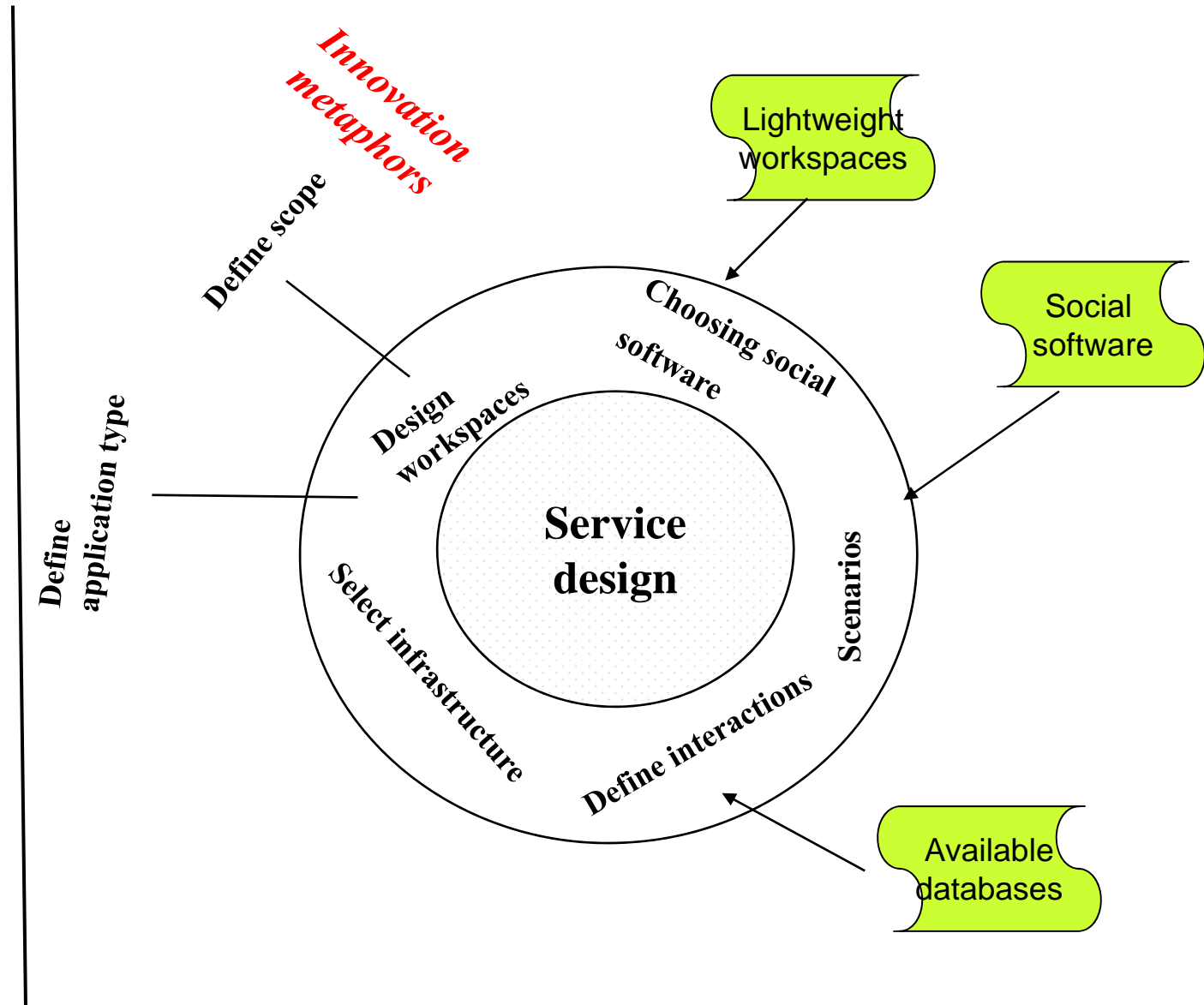
Features of each service



Feature	Process	Social; structure	Communication	Knowledge	Implementation
					Social software
					Groupware
					Database

2.4 Service Infrastructure Design

Service	Supporting structure



2.3.1 Identify technical services

What services are needed to capture trends

What services are needed to evaluate trends and their impact

What services are needed for knowledge creation

What services are needed for role interactions

Guidelines

What are the business activities
What are potential changes

Matching service to technology

Linking between model to provide holistic design

Open model platform

Step 1: Defines all concepts and their relationships within the model

Step 2: Provide links between concepts in different models

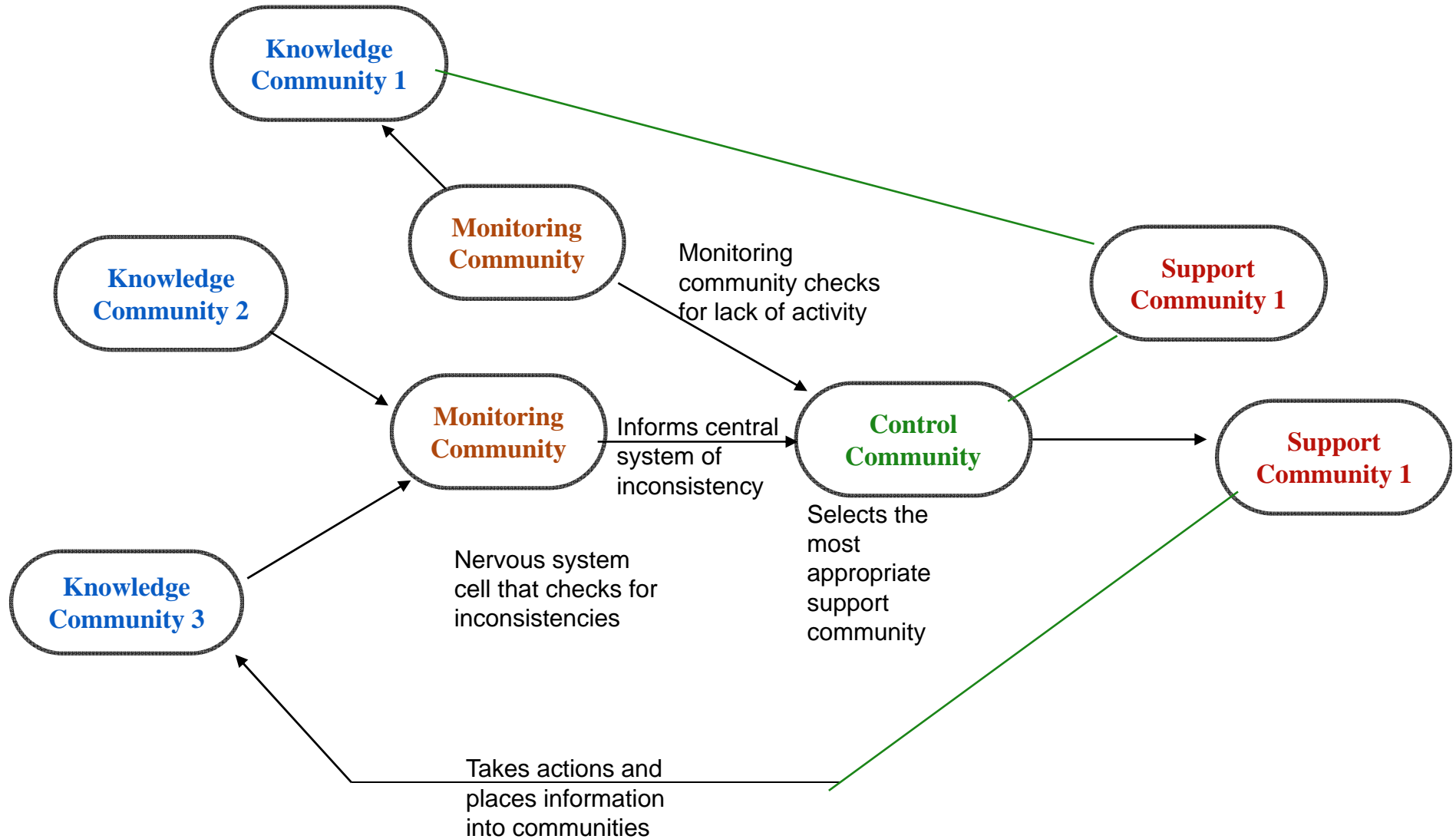
Link participant to organizational unit

Option 2: Possibilities of agents helping to manage system

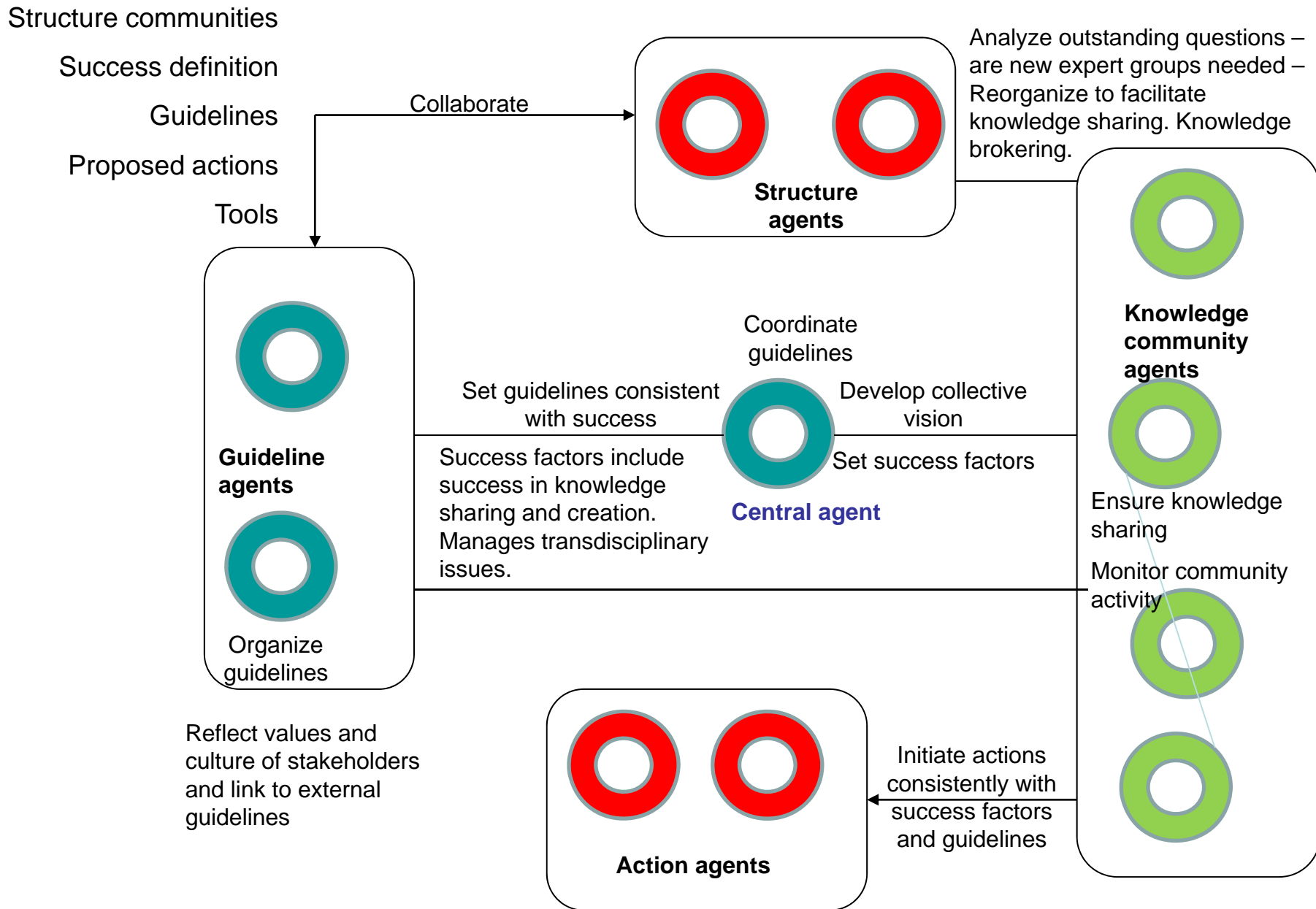
Example: Find participant that has the knowledge to carry out the role

Example: Make sure people communicate to transfer knowledge as required
by a scenario

Community Structure for sustainability



A possible agent classification



Practical aspects:

Improving meaningful ways to design dynamic systems

Developing infrastructures that support change

Describing change in ways meaningful to users

Need semantics meaningful to dynamic systems



View systems from a number of perspectives



Integrating multi-perspective semantics