

National Consortium for Continuous Improvement

Solutions: Today's Challenges, Tomorrow's Promise

An Actor-Network Approach to Leading Technological Change

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Objectives

1. Present Actor-Network Theory (ANT) as a theoretical perspective and practical methodology for leading technological change.
2. Examine a case study in which ANT was used to implement a project management methodology at a large research university.
3. Explore the implications of ANT as a new approach to leadership and change.

Research on Failed Change Projects

60-70% of new organizational change projects fail (Kotter, 1996; Beer & Nohria, 2000; and Barrett, Grant & Wailes; 2006):

- **Bureaucracy** – organizational rules and red tape (Pinchot & Pinchot: 1996)
- **“Organizational mindsets”** – diverse value systems and conflicting beliefs and values (Reger et al, 1994)
- **Organizational structure** – rigid boundaries between stakeholders, functions and disciplines (Ashkenas et al, 1995)
- Lack of required **competencies and capabilities** (Sanchez & Heine, 1997)
- Organizational **politics** (Fountain, 1995)
- Lack of adequate **resources and rewards** (Christensen, 1997)
- Lack of effective **problem solving, decision making** and conflict resolution (Iansiti, 1998)
- Lack of **participation** in organization design (Emery, 1993)

The Blind Spot in Leadership

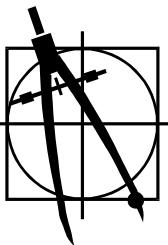
McKinsey Leadership Research Project (2000), “Leadership in the Context of Emerging Worlds: Illuminating the Blind Spot”

Leadership Blind Spot

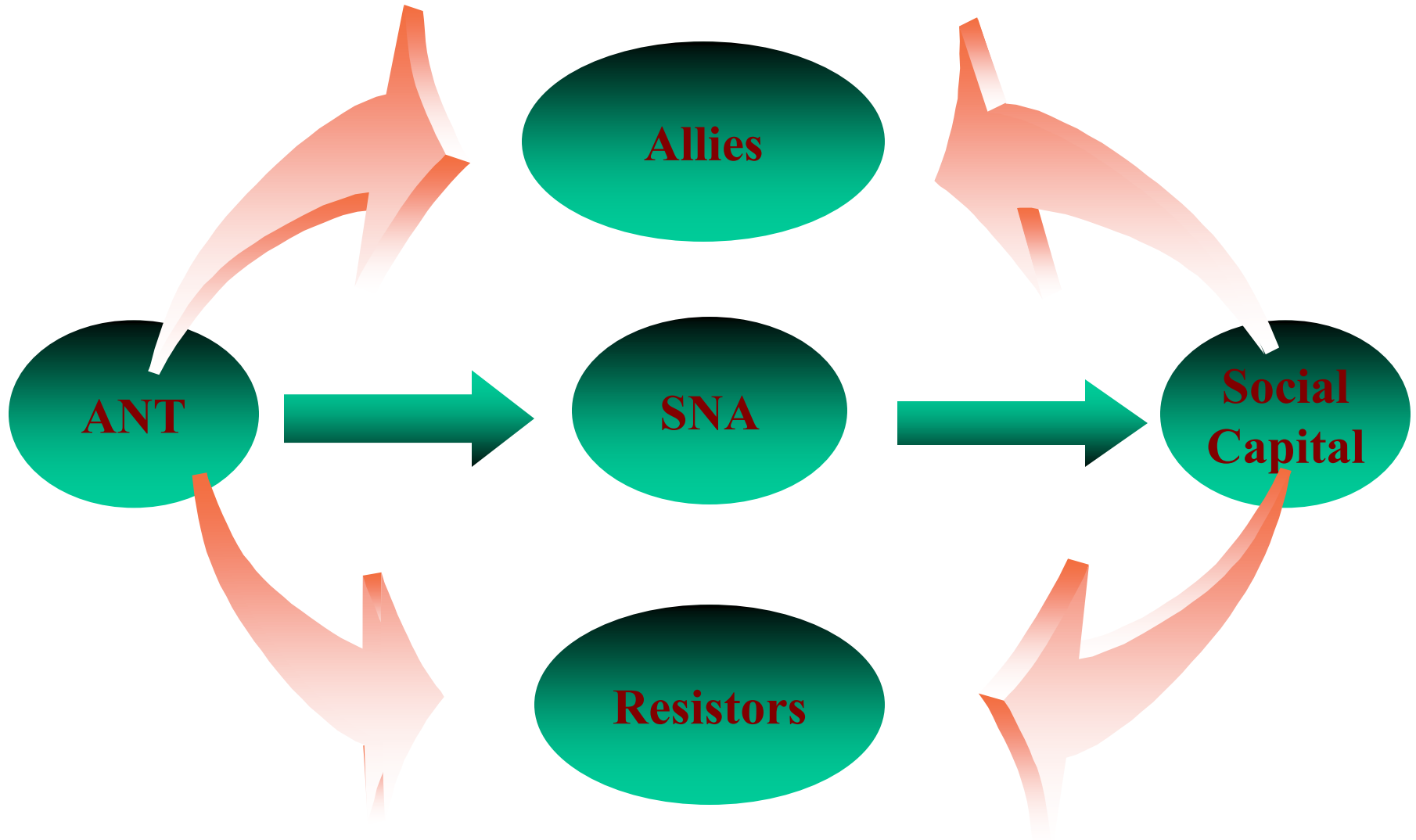
The blind spot for most leaders is “in **not seeing or understanding the full process of “social reality formation”** (p.6) in terms of how experience is cognized, accessed and translated into knowledge and action at the tacit, behavioral, relational, and system levels.

Basic Premise of ANT of Leadership

“Leadership depends on interaction. Interaction depends on physical proximity, social and organizational propinquity, and networks of open channels of communication. And so, not surprisingly, the emergence and success of leadership depend on such physical and social arrangements. Such arrangements may also be possible substitutes for leadership” (Bass: 1990, p. 658).



Relationship of Networking Methodologies



What is ANT?

ANT is “a progressive constitution of a network in which both human and non-human actors assume identities and qualities according to prevailing strategies of interaction (and negotiation) . . .

The most important of these negotiations is ‘**translation**’, a multi-faceted interaction in which actors:

1. *Construct* common definitions and meanings,
2. *Define (and determine)* representatives (and alliances),
3. *Co-opt* each other in the pursuit of individual and collective objectives (Bardini 1999).

Tenets of ANT

1. Emphasis on networks and links, as opposed to heroic individual "geniuses".
2. Nodes called actants include human and non-human entities to maintain the stability and integrity of the network.
3. Groups (and individuals) in the network in general have different value systems, and translation, or negotiation and compromise, among these entities is necessary for a network to succeed.
4. Leaders in a project interpret "reality" and translate reality into theories of the project.
5. Aligned interests are created by enrolling allies and translating their interests so that their participation will lead to convergence, growth and continuance of the network (Gougen, 2000).

Key Concepts of ANT

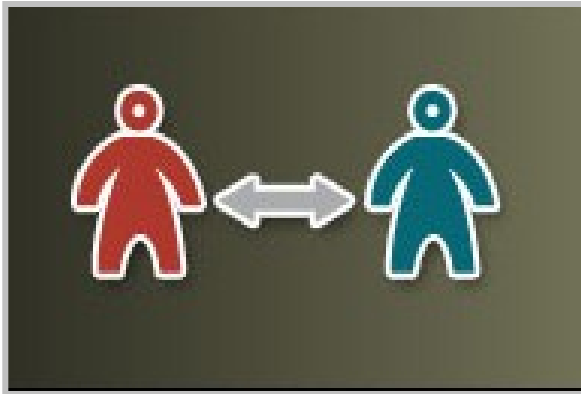
1. **“Translation”** is the ability of leaders to keep people (other actors) involved in the project by translating their efforts into their own language and values.
2. **“Actants”** construct reality through their language and metalanguage, relationships, and integration of objects and humans.
3. **“Punctualization”** is a process or effect (e.g., structure) that emanates from the network as a temporary entity or event that has relative durability in that it recursively generates and reproduces itself.
4. **“Black boxes”** are created when "many elements are made to act as one". Black boxes can be objects, people, or networks. A stabilized network becomes a black box.

How Does ANT Work?

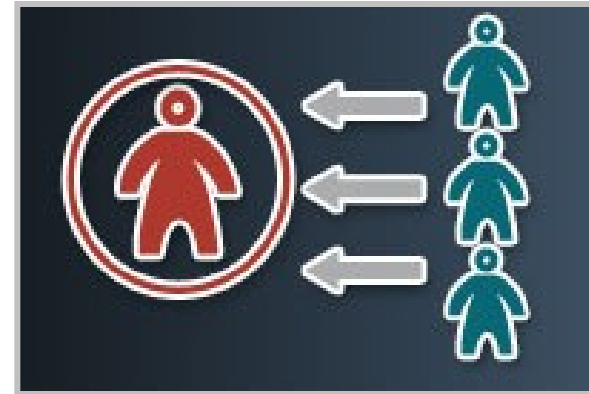
ANT proposes that aligned interests are created by enrolling allies and the translation of their interests so that their participation will lead to the network's continuation or maintenance.

The formation and maintenance of these networks of aligned interests is a continuing theme for leaders. Some strategies for doing this include: (1) seeking new alliances; (2) enrolling new members or network nodes; (3) creating and exploiting black boxes; (4) employing non-human entities, e.g., iPhones, computers, buildings, etc. to increase and stabilize the network.

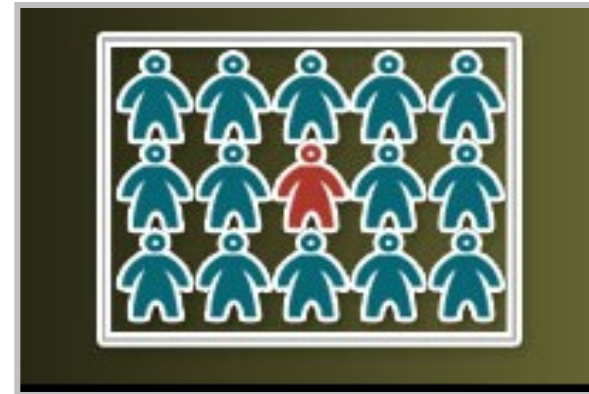
Initial Interaction



Attraction of Allies



Network Growth



Network Stabilization

(Graphics courtesy of Cisco Systems, Inc.)

Development of Actor-Networks

1. Translate others interests to your own
2. Engage and mobilize allies to translate and negotiate interests
3. Inscribe beliefs, practices and relations in materials and technologies
4. Frame key issues and debates
5. Punctualize actors into more complex networks
6. Create “immutable mobiles” and tokens which can be passed back and forth between actor-networks
7. Establish black boxes (many networks that converge and work as one)

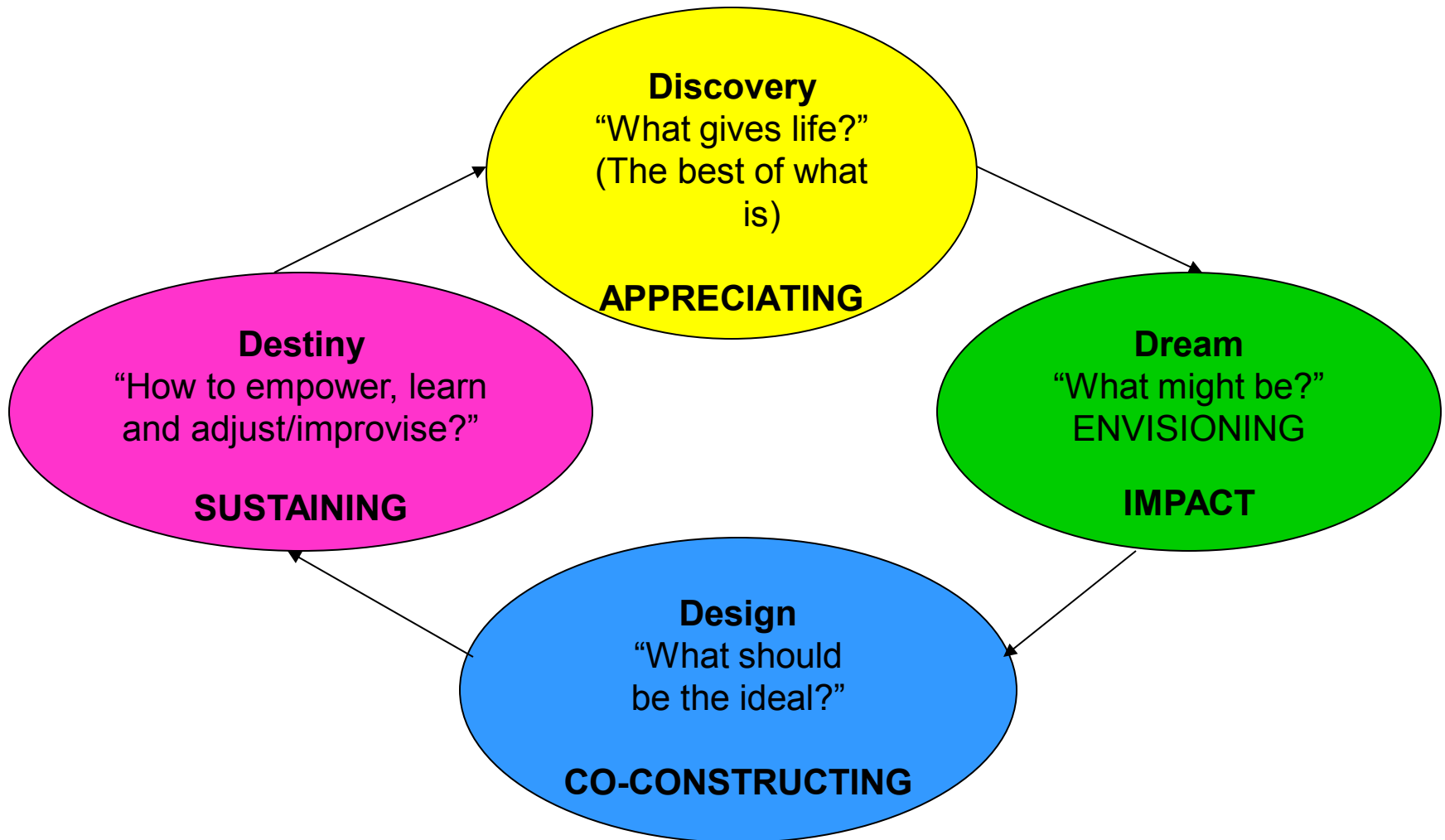
Translation

“Translation is a process in which a leader aligns the interests of many in a chain. To accomplish this leaders marshal all the evidence and all their allies at one spot in regular consultation meetings with the representatives and negotiate and resolve differences with others to form communities. Leaders create communities of practice comprised of many networks which then shape/construct social reality” (Fox, 2000).

Four Stages of Translation

1. **Problematization** – the actor (leader) defines a challenge or problem in such a way that the others can recognize it as their problem, and provides the means for resolving the problem.
2. **Interessement** – the leader locks allies into roles and gains their commitment to a set of goals and a course of action.
3. **Enrolment** – the leader negotiates, persuades, induces and coordinates allies to carry out the course of action consolidating their roles.
4. **Mobilization of allies** – the leader creates and empowers actants to communicate (via charts, diagrams, etc. – “immutable mobiles”) progress being made toward their shared goals and actions, thus reinforcing commitments to the course of action. At this stage the leader has lined up a chain of distinctive links to perpetuate the network (Callon, 1986).

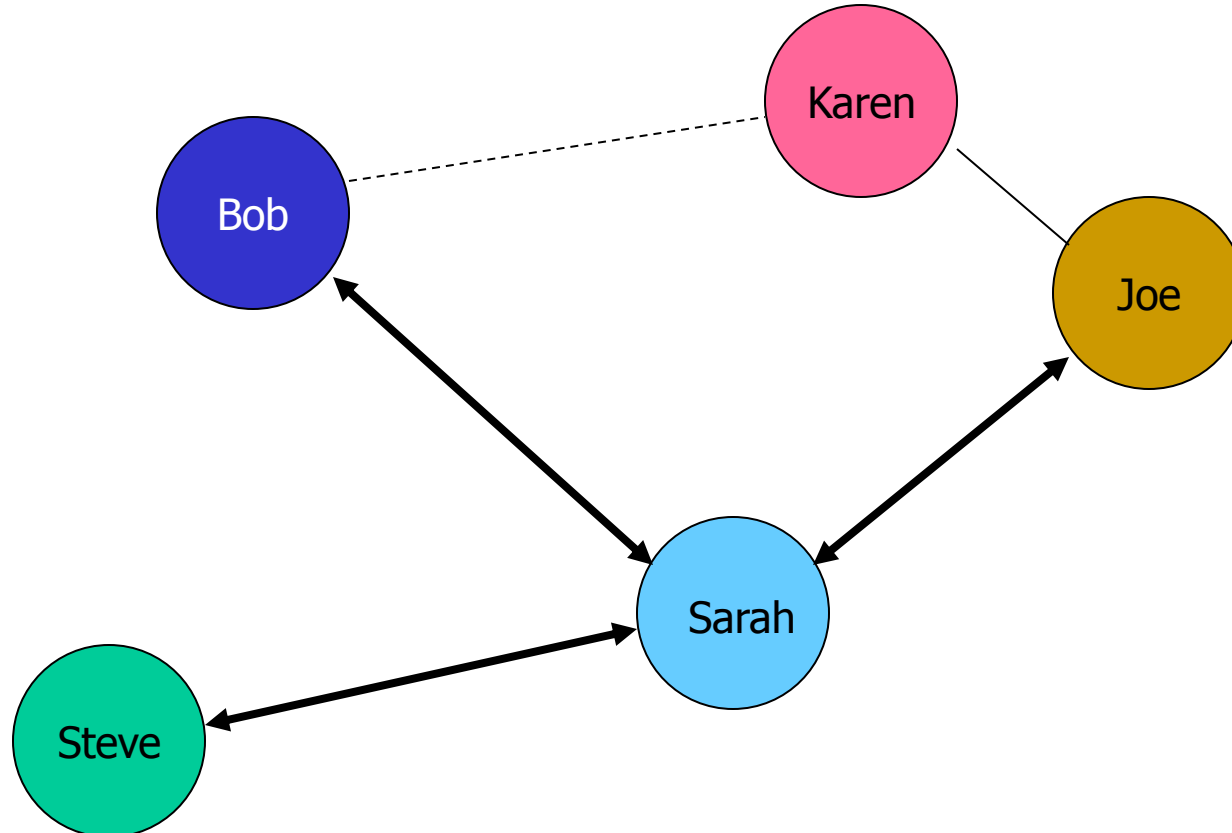
Four-D Appreciative Inquiry Model



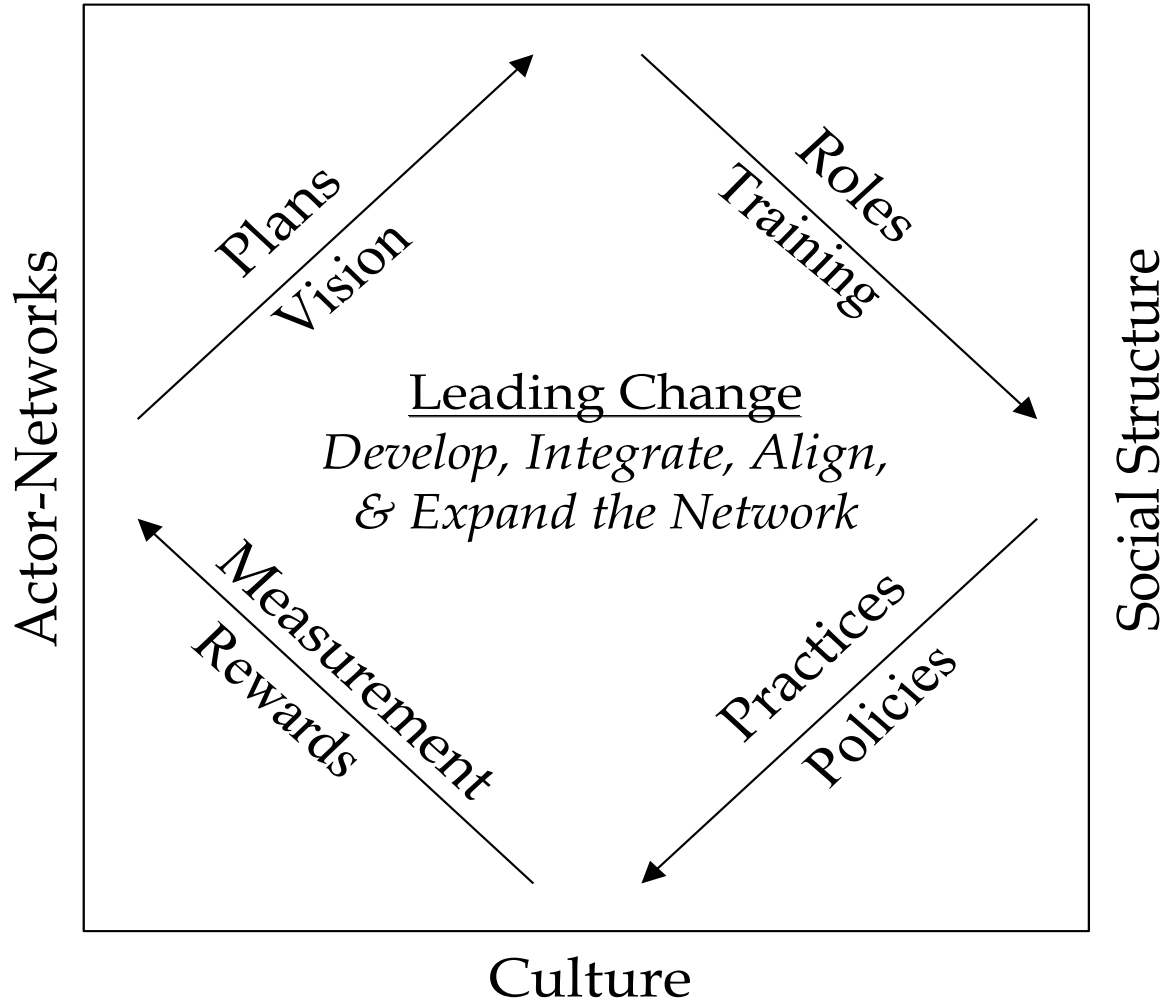
ANT Change Methodology

1. Identify and describe the purpose, needs, and benefits of the technological change (problematization).
2. Develop a list of key actants (actor-networks or stakeholders) and define their interests, needs, and requirements.
3. Map relationships of actants and identify centrality of relationships, strong and weak ties, structural holes, and sources of resistance.
4. Engage key actants and translate and inscribe their interests into visions, objectives, plans and roles (interestment).
5. Enroll, mobilize, empower, and coordinate actants as translators, i.e., create chains of translators, and train and encourage them to deal with resistance.
6. Devise and implement strategies for expansion and continuance of the network, e.g., create centers of translation for expanding and perpetuating the network and effecting the desired change.

Mapping and Constructing Actor-Networks

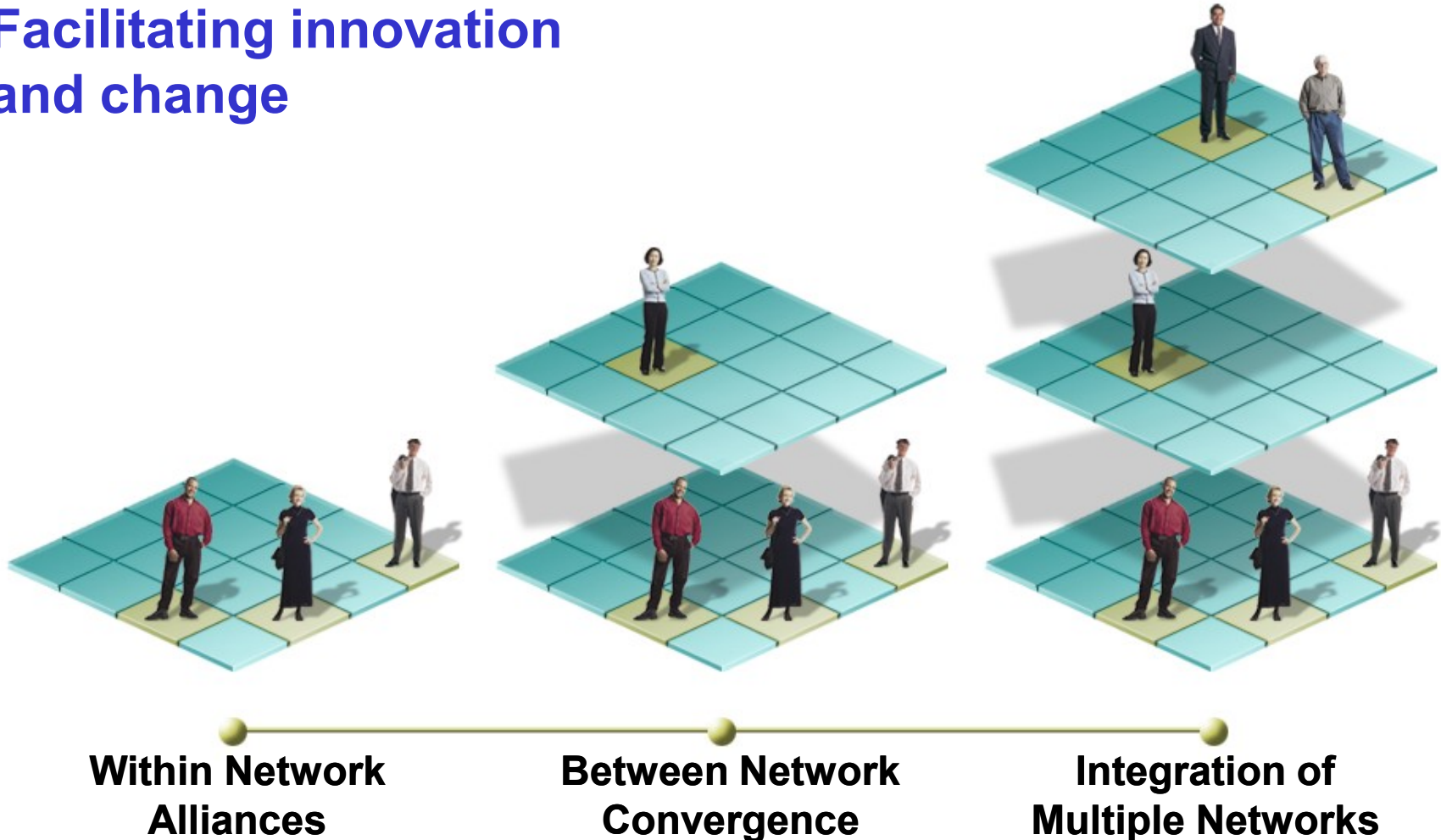


ANT Model for Integrating New Technologies



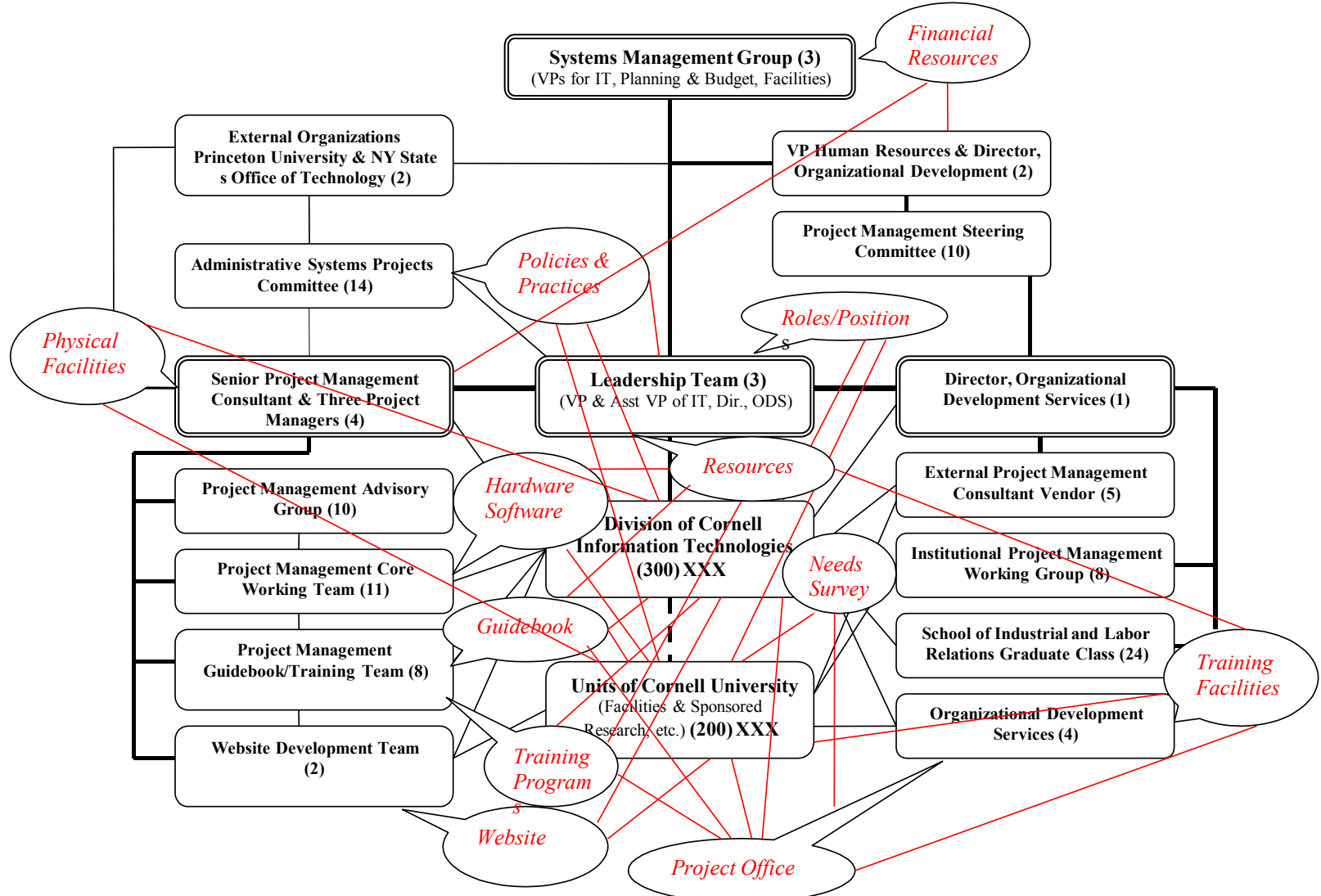
Convergence of Actor-Networks

**Facilitating innovation
and change**



(Graphics courtesy of Cisco Systems, Inc.)

Map of Actor-Network for Project Management



Results of ANT Approach to Change

- Developed common terminology and methodology
- Identified and communicated strategic issues to senior management and created sponsorship.
- Stimulated collaboration and mutual understanding between groups.
- Created the infrastructure of groups, training curriculum, facilities, website, guidebook to support project management.
- Integrated and tested training programs, workshops, seminars, coaching, and mentoring.
- Developed a network of instructors to deliver ongoing project management training.
- Established a baseline of performance in project management.
- Provided consulting resource for skill training and use of software tool.
- Created a network of advanced certified (PMP) project management professionals.
- Established a broad institutional network or community of practice for project management.
- Created an exemplar for leading technological change.

Two Models of Power/Change

1. **The “No Name” (Agency Based) Network Model of Power/Change:**
Network is developed through chains of local agents who translate and reinterpret the mission and values of the project. Leadership, power, competence and successful change result from the effects of the expanding network of translators and supporters. The leader is only one aspect of the network (The “No Name” Model).
2. **The “Hero” (Leader Based) Diffusion Model of Power/Change:**
Change emanates from a leader at the top and trickles down the organization through the power of the leader, the content or structure of the message, the climate of the organization, and the skill of the leader (The Hero Model).

How ANT Leaders Create Successful Change . . .

1. Identify obstacles and opportunities to innovation & change
2. Identify and map key actor-networks to expand or stabilize the networks
3. Determine the needs, interests, and requirements of the networks
4. Develop interactions and relationships via communication
5. Resolve resistances of inhibitors through negotiation
6. Translate interests into visions, objectives, roles, and plans
7. Inscribe translations into materials and technology
8. Engage, mobilize, empower, and coordinate allies as translators
9. Simplify, develop exchange tokens, and create black boxes
10. Identify and implement strategies for strengthening the network

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