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Canonical Action Research: Introduction, critique and practical case
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- Slides from Davison , R. Based on Davison, R.M., Martinsons, M.G. and Kock, N.F. (2004) Principles of Canonical Action Research, *Information Systems Journal*, 14, 1, 65-86.
- Wieringa Ch. 17.

Layout

- Motivation
- Background & Introduction
- Principles & Criteria
- Critique and Improvements
- Case Analysis & Future Applications

Introduction

- Action Research involves…

  - solving organisational problems

  - improving organisational circumstances for stakeholders (employees, managers, customers)
- …by means of researcher intervention, thus…

  - contributing to knowledge about both academic theory & organisational practice

Time machine

✓ **How do you see yourself in one year?**

  ✓ Master program: What type of projects would you like to conduct?
  ✓ Professional career: In which sector would you like to work?

Roles in a nutshell

Researcher
- Be curious about certain phenomena
- Select a research field

Entrepreneur
- Be creative and design a business model
- Select a field

Consultant
- Be an expert in a particular field
- Design novel solutions for certain organisations

Example of Potential projects!

1. We need to develop a new process to bill our clients. How can this be achieved and what role might IT play?

2. We need to ensure that the knowledge our employees create is managed for the good of the whole organisation. How should we do this?

3. Our senior executives need a new IT-based planning and co-ordinating system. What should it look like? What about implementation? How do we conduct the whole project?

Hands on! (groups of 3 people)

- Adopt the role of your preference and one project.
- What are the major tasks you need to conduct for your research/entrepreneur/consultancy project? Write down two-three tasks

Researcher   **Entrepreneur**   **Consultant**

PROJECTS

1. We need to develop a new process to bill our clients. How can this be achieved and what role might IT play?

2. We need to ensure that the knowledge our employees create is managed for the good of the whole organisation. How should we do this?

3. Our senior executives need a new IT-based planning and co-ordinating system. What should it look like? What about implementation? How do we conduct the whole project?

Hands on! (groups of 3 people)

Researcher
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Entrepreneur
KM-build product, study the mk

ConsultantProc- investigagat e the need for change, identify stakeholders
M- Understand the context, identify stakeholders, define goal and identify treatment, execute treatment and evaluate

Motivation

Since the mid-1990s, an increasingly wide application of AR in IS research, as well as in other disciplines
Yet much of this research is of variable quality
There are few clear guidelines on how to conduct AR properly

• So as to ensure rigor and relevance

• Combining strong action and strong research

Criticisms of Action Research

- AR lacks methodological clarity
- There is no difference between AR and Consulting
- AR tends to produce either
'research with little action'

or
'action with little research'
- AR is not research!
- AR is not scientific!

Two Demanding Masters

Client and Research Community/ your MSc or PhD advisor

Client
Need for organisational problem solving

Research Community
Need for knowledge that is relevant in the organisation under study, but general enough to be applicable to other problem contexts (in other organisations)

Do you see yourself in the position of having two leaders?

CAR is interpretive

- The CAR researcher-practitioner needs to engage in many interpretive and diagnostic acts, thinking carefully about the organisational situation, representing the world as experienced by the clients.

- Disciplined subjectivity and imagination are critical skills

- This is *not* an experiment, the organisation is not a guinea-pig!

CAR is…

- Iterative – with one or more cycles of interventions
- Rigorous (correct use of methods in the task context)

  - Carefully planned iterations to develop detailed problem context knowledge and to identify relevant solutions

  - Continuous problem (re)diagnosis

  - Flexible application of the method
- Collaborative

  - Researchers and Clients must work together

  - Clients must actively participate in the project

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Canonical AR Projects

- A CAR project can be expected to investigate the evolution of an organisational change process in great detail
- Each organisational context will have a unique set of constraints and idiosyncrasies
- Organisational circumstances are ever changing

How to Do CAR Well?

- CAR has been applied quite extensively in the last 40 years
- Published guidelines on how to conduct CAR projects
- These were designed to be helpful – but not deterministic

Check:
Davison, R.M., Martinsons, M.G. and Kock, N.F. (2004) Principles of Canonical Action Research, Information Systems Journal, 14, 1, 65-86.
Davison, R.M., Martinsons, M.G. and Ou, C.X.J. (2012) The Roles of Theory in Canonical Action Research, MIS Quarterly, 36, 3, 763-786.

Principles of CAR

Five principles and 31 criteria that were designed to:
- apply to most CAR situations
- be interdependent
- be flexible and facilitate:

  - clear/systematic presentation of findings,

  - justification of courses of action,

  - explicit contributions to knowledge

  - an assessment of how well done the CAR was

Principles & Criteria

1. Researcher-Client Agreement
2. Cyclical Process Model
3. Role of Theory
4. Change through Action
5. Specification of Learning

1. Researcher-Client Agreement

- Guiding foundation for the project
- Client must understand what CAR involves
- Mutual guarantees for behaviour
- Basis for building trust in the organisational context
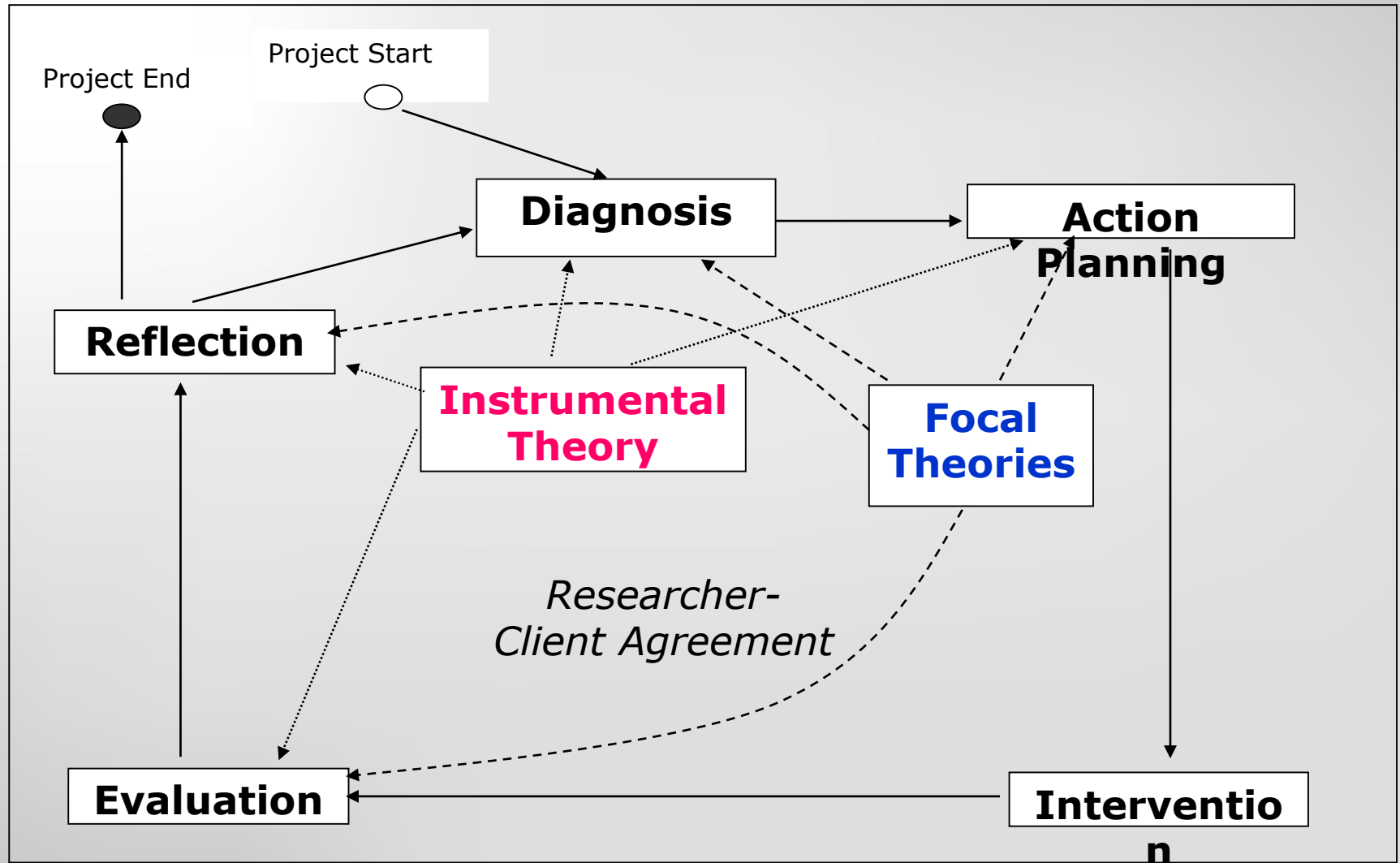- Promote a spirit of shared inquiry

Benefits!

RCA Criteria

a) Did both the researcher and the client agree that CAR was the appropriate approach for the organisational situation?
b) Was the focus of the research project specified clearly and explicitly?
c) Did the client make an explicit commitment to the project?
d) Were the roles and responsibilities of the researcher and client organisation members specified explicitly?
e) Were project objectives and evaluation measures specified explicitly?
f) Were the data collection and analysis methods specified explicitly?

2. Cyclical Process Model

- Sequential progress through the Cyclical Process Model helps to ensure rigor
- Some between-stage iteration may occur – needs to be justified
- Usually several cycles are necessary

CPM Criteria

a) Did the project follow the cyclical process model or justify any deviation from it?
b) Did the researcher conduct an independent diagnosis of the organisational situation?
c) Were the planned actions based explicitly on the results of the diagnosis?
d) Were the planned actions implemented and evaluated?
e) Did the researcher reflect on the outcomes of the intervention?
f) Was this reflection followed by an explicit decision on whether or not to proceed through an additional process cycle?

CPM Criteria

g) Were both the exit of the researcher and the conclusion of the project due to either the project objectives being met or some other clearly articulated justification?
h) How was the independent diagnosis of the organisational situation conducted?
i) Which instrumental theories did the researcher use?
j) How were these theories selected?
k) How did these theories support the identification of the focal theory used to guide the changes?
l) Post-intervention, did the researcher reflect on the instrumental theories used and their suitability?

3. Theory

- Lewin (1945): "There is nothing so practical as a good theory".
- Ghoshal (2005): "Nothing is as dangerous as a bad theory".
- Both of these two statements apply equally to CAR

  - Selection of an appropriate theory must be handled with great care given the potential for consequences in the organisational setting.

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AR and Theory

"Action Research without theory - is not research"

- "It is highly unlikely that the researcher can know definitely and in advance the exact theory that will be used or developed"
- Premature application of theory may be counterproductive
- So theory-free problem diagnosis may need to precede CAR, yet theory is important
- Two types of theory: instrumental and focal

Instrumental Theory

Our use of the term 'instrumental theory' follows Hambrick's (2007) comment that instrumental theories help us to "organize our thoughts, generate coherent explanations … [and so] achieve understanding". Such theories will be practical (Lewin 1945) and closely match reality (cf. Weick 1995).
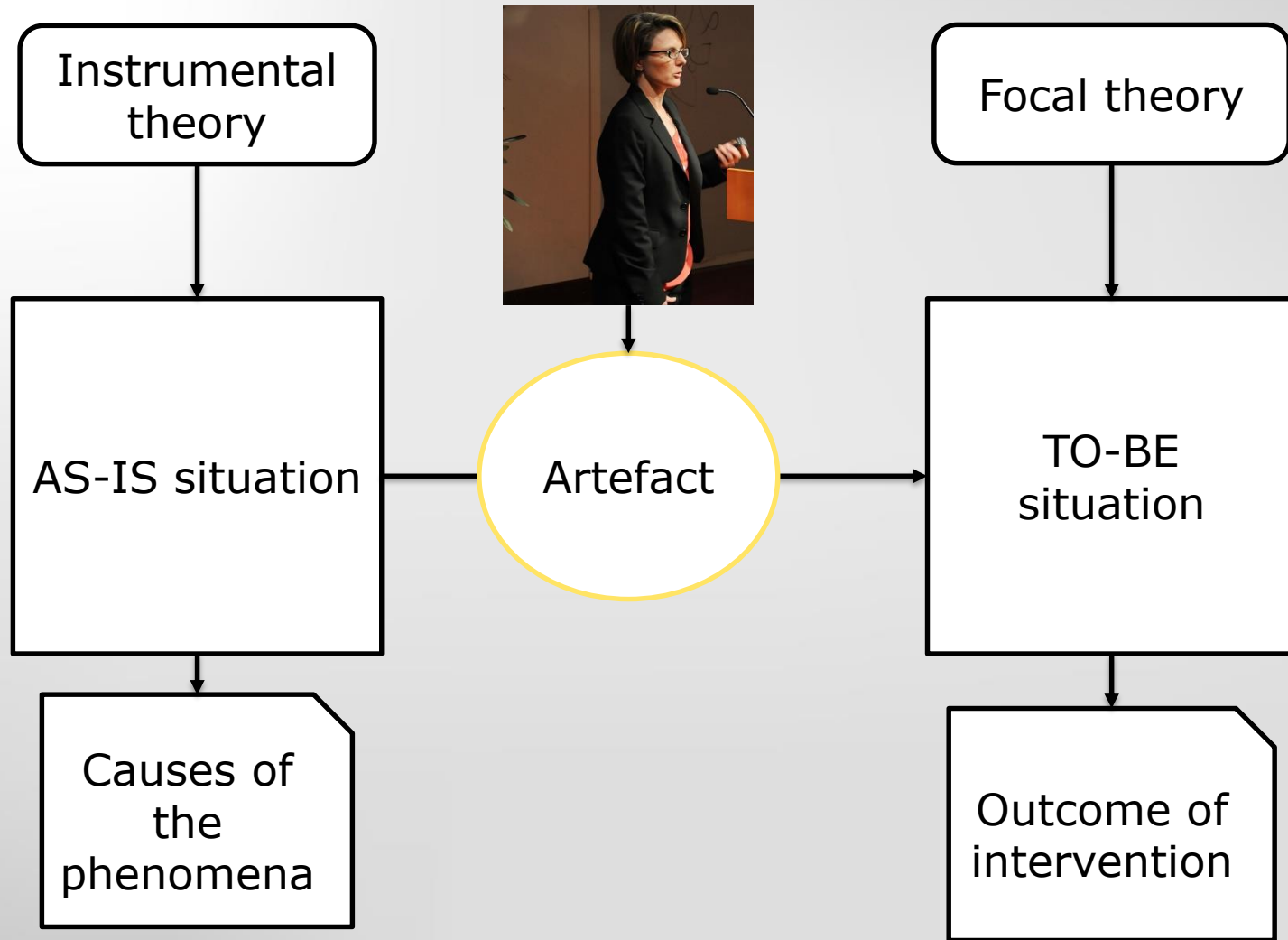
Instrumental Theory

- Particularly valuable for diagnosis and planning
- Play a mediating role between client and researcher
- Used to explain and analyse organisational activities/phenomena related to the project/problem
- Include any tools, models or processes that theorise how work is done or how outcomes are achieved

Focal Theory

- Provides the intellectual basis for action-oriented change in a CAR project.
- Is unlikely to remedy an organisational problem alone – must be in combination with one or more instrumental theories

Theory & Consequences

What might go wrong if we pick an inappropriate theory?

- We could push the organisation to change in a direction that does not fit its organisational culture – leading to internal conflicts, or worse.
- We need to choose a theory that fits the organisational circumstances, the IT, the people, the culture.

The client needs to approve the theory

Theory Criteria

a) Were the project activities guided by a theory or set of theories?

b) Was the domain of investigation, and the specific problem setting, relevant and significant to the interests of the researcher's community of peers as well as the client?

c) Was an instrumental theory used to derive the causes of the observed problem?

d) Did the planned intervention follow from this instrumental theory?

e) Was the focal theory used to evaluate the outcomes of the intervention?

Theory Criteria II

a) Did a focal theory emerge from the situation or during the problem diagnosis?
b) Was this focal theory acceptable to both client and researcher?
c) What role did instrumental and focal theories play with respect to the diagnosis and the action planning?
d) Were these theories evaluated for their applicability to the organisational context, considering current organisational practices?
e) Did both the researcher and the client undertake this evaluation?
f) Were theoretical explanations for the current organisational problem situation evaluated and reflected upon?
g) Did the researcher reflect on the focal theory used and its ability to predict the change outcomes?

Theory

4. Change through Action

Action and change are indivisible
- If there is no change…

  - No problem, intervention failed, or obstacles prevent successful intervention
- Both researcher and client must be motivated to design and implement change
- The change needs to be contextually and culturally appropriate (cf. theory)

Change through Action Criteria

a) Were both the researcher and client motivated to improve the situation?
b) Were the problem and its hypothesized cause(s) specified as a result of the diagnosis?
c) Were the planned actions designed to address the hypothesized cause(s)?
d) Did the client approve the planned actions before they were implemented?
e) Was the organisation situation assessed comprehensively both before and after the intervention?
f) Were the timing and nature of the actions taken clearly and completely documented?

5. Learning through Reflection

Both masters need to learn from the researcher's reflections
- Practical solutions for the client
- Knowledge for the broader scholarly community
- Specific knowledge for the Action Research community (optional!)

5. Learning through Reflection Criteria

a) Did the researcher provide progress reports to the client and organisational members?
b) Did both the researcher and the client reflect upon the outcomes of the project?
c) Were the research activities and outcomes reported clearly and completely?
d) Were the results considered in terms of implications for further action in this situation?
e) Were the results considered in terms of implications for action to be taken in related research domains?
f) Were the results considered in terms of implications for the research community (general knowledge, informing/re-informing theory)?
g) Were the results considered in terms of the general applicability of CAR?
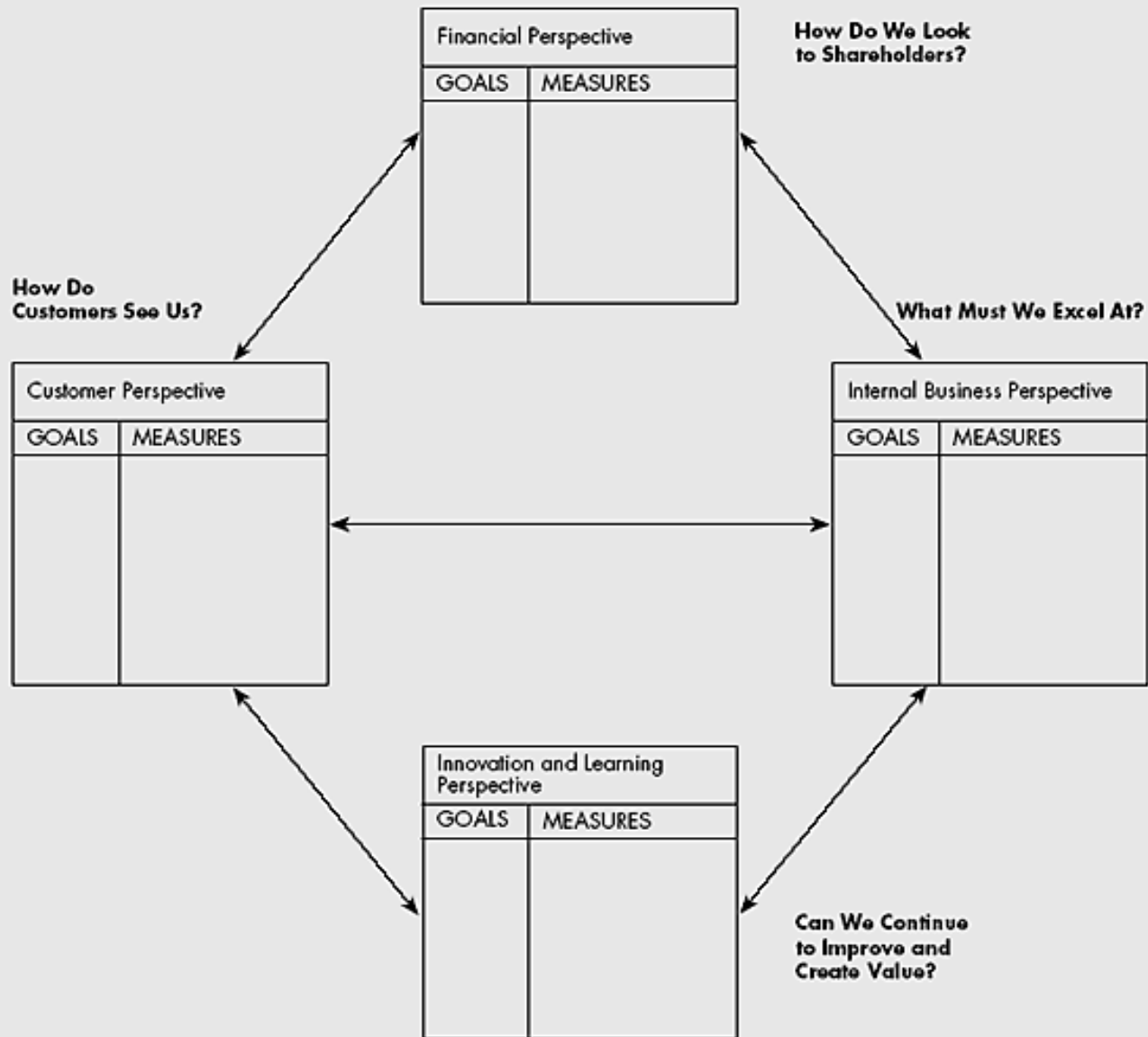
Illustrating the CAR Process

- A researcher undertakes a series of investigations into knowledge sharing practices in Chinese firms

  - Eastwei, RuderFinnAsia

- The Value Shop and Balanced Scorecard as instrumental theories, with risk measure (TCE) and Transactive Memory Theory (TMT) as focal theories.

The Balanced Scorecard Links Performance Measures

Financial Perspective

GOALS	MEASURES

How Do We Look to Shareholders?

How Do Customers See Us?

Customer Perspective

GOALS	MEASURES

What Must We Excel At?

Internal Business Perspective

GOALS	MEASURES

Innovation and Learning Perspective

GOALS	MEASURES

Can We Continue to Improve and Create Value?

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Eastwei - Diagnosis 1

- Semi-structured interviews, participant observations of employees at work, work process mapping and instant messaging content analysis.
- Critical role of guanxi and in-groups:

- "My willingness to take the initiative to share with others depends on the guanxi. If we have good guanxi, I will share my experience and comments".

Eastwei - Diagnosis 2

- Supreme importance of an IM tool (MSN or Skype):

  - Used by all employees from CEO downwards;

  - 10-15 parallel IM chats was normal

  - Most employees had several hundred contacts (far more than the 100-150 employees of the firm)

  - 80% of IM content was work related, esp. coordination and knowledge sharing tasks
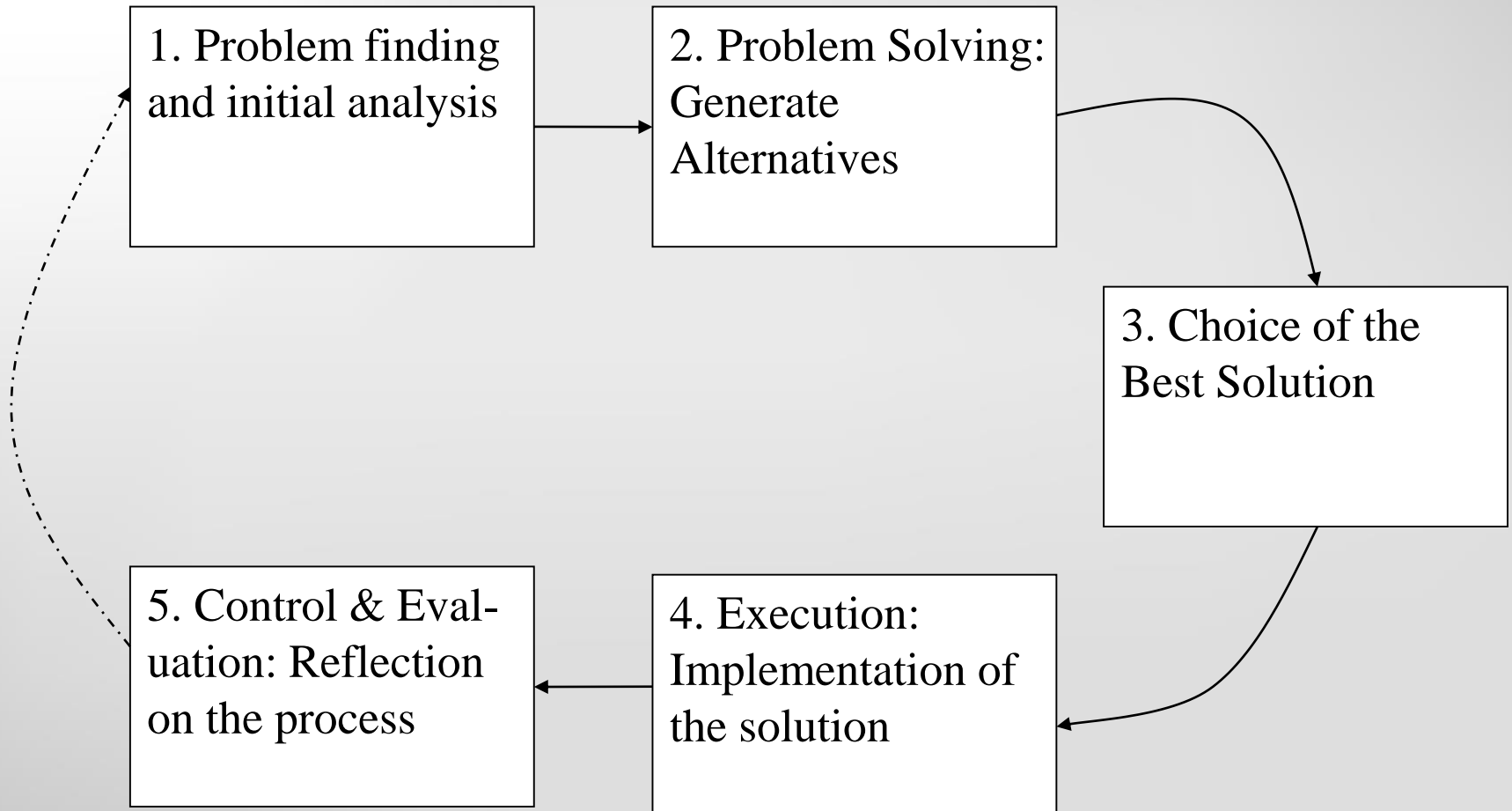
Eastwei - Diagnosis 3

- IM use was interruptive – but not negative.
- IM contributed to an excellent knowledge sharing culture:

  - No proprietary attitude, but most sharing with guanxi-linked in-group members;

  - Knowledge itself seen to be ephemeral – no long lasting value, whereas guanxi is long lasting;

  - No attempt to archive knowledge: once received, it is read, then discarded.
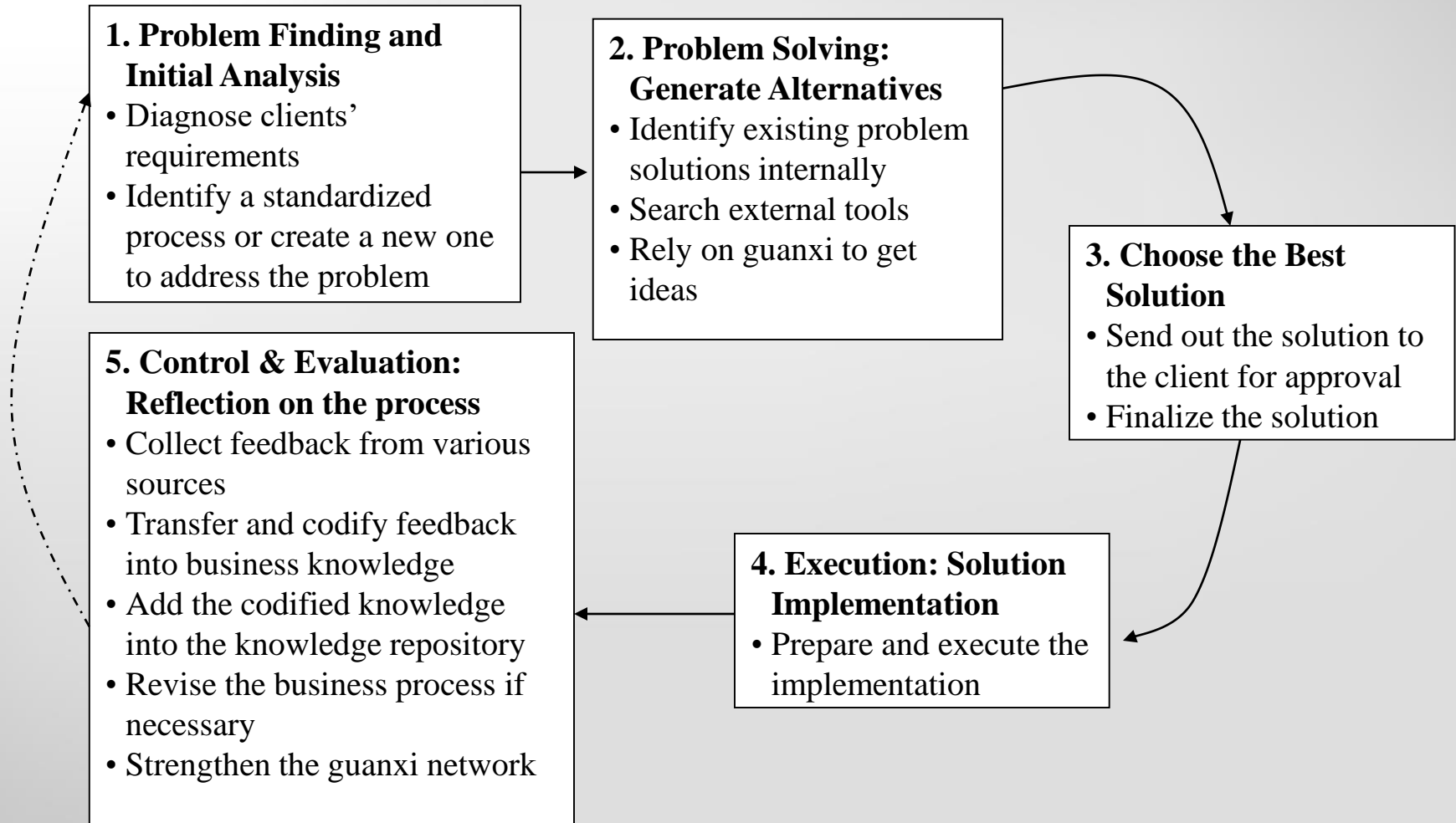
Eastwei - Diagnosis 4

- The second criterion of Principle 2 reads "Did the researcher conduct an independent diagnosis of the organisational situation?".
- The Value Shop (Stabell & Fjelstad, 1998) provides a detailed framework for this independent diagnosis in professional service firms.

Instrumental Theory 1: The Value Shop Model

1. Problem finding and initial analysis

2. Problem Solving: Generate Alternatives

3. Choice of the Best Solution

4. Execution: Implementation of the solution

5. Control & Eval-uation: Reflection on the process

Stabell & Fjelstad, 1998

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A Knowledge-Based Value Shop (i.e. adapted to the problem context)

1. Problem Finding and Initial Analysis
- Diagnose clients' requirements
- Identify a standardized process or create a new one to address the problem

2. Problem Solving: Generate Alternatives
- Identify existing problem solutions internally
- Search external tools
- Rely on guanxi to get ideas

3. Choose the Best Solution
- Send out the solution to the client for approval
- Finalize the solution

5. Control & Evaluation: Reflection on the process
- Collect feedback from various sources
- Transfer and codify feedback into business knowledge
- Add the codified knowledge into the knowledge repository
- Revise the business process if necessary
- Strengthen the guanxi network

4. Execution: Solution Implementation
- Prepare and execute the implementation

Eastwei - Action Planning

The researcher planned a wiki-based informal KS repository, with strong management support.

This initiative was integrated with current strategic thinking and received <u>espoused</u> support from employees.

It was premised on the theory of Transaction Cost Economics and designed to create economic benefits associated with employee productivity

What could happen in Eastwei with the implementation of a Wiki?

FAIL

Eastwei - Intervention & Evaluation

The employees rejected the wiki-based system!

- The proposed economic benefits only reflected management's view.
- They were quite happy with their existing informal KS practices and saw no value to be gained by changing these practices.
- The wiki-system was perceived as damaging existing informal KS in-groups. Also, they did not want to lose control over their knowledge sharing practices.

Eastwei - Reflection

- Although this project failed, the researcher gained valuable information about what was important to employees.
- Outcomes

  - Economic basis would not be sufficient to motivate change – or even to explain current practice.

  - Similarities between current work practices and Transactive Memory Theory.

RuderFinnAsia - Diagnosis 1

Very similar to that at Eastwei, but the researcher deliberately applied Transactive Memory Theory (Wegner, 1987):

- This is a theory of 'who knows what'
- Maybe you don't know the answer to a question but if you know who might know, and if you have guanxi, then you can ask for help
- If you have a good personal knowledge network, then you can reliably access knowledge from others

RuderFinnAsia - Diagnosis 2

We asked employees about transactive memories – and obtained confirmation of their importance.
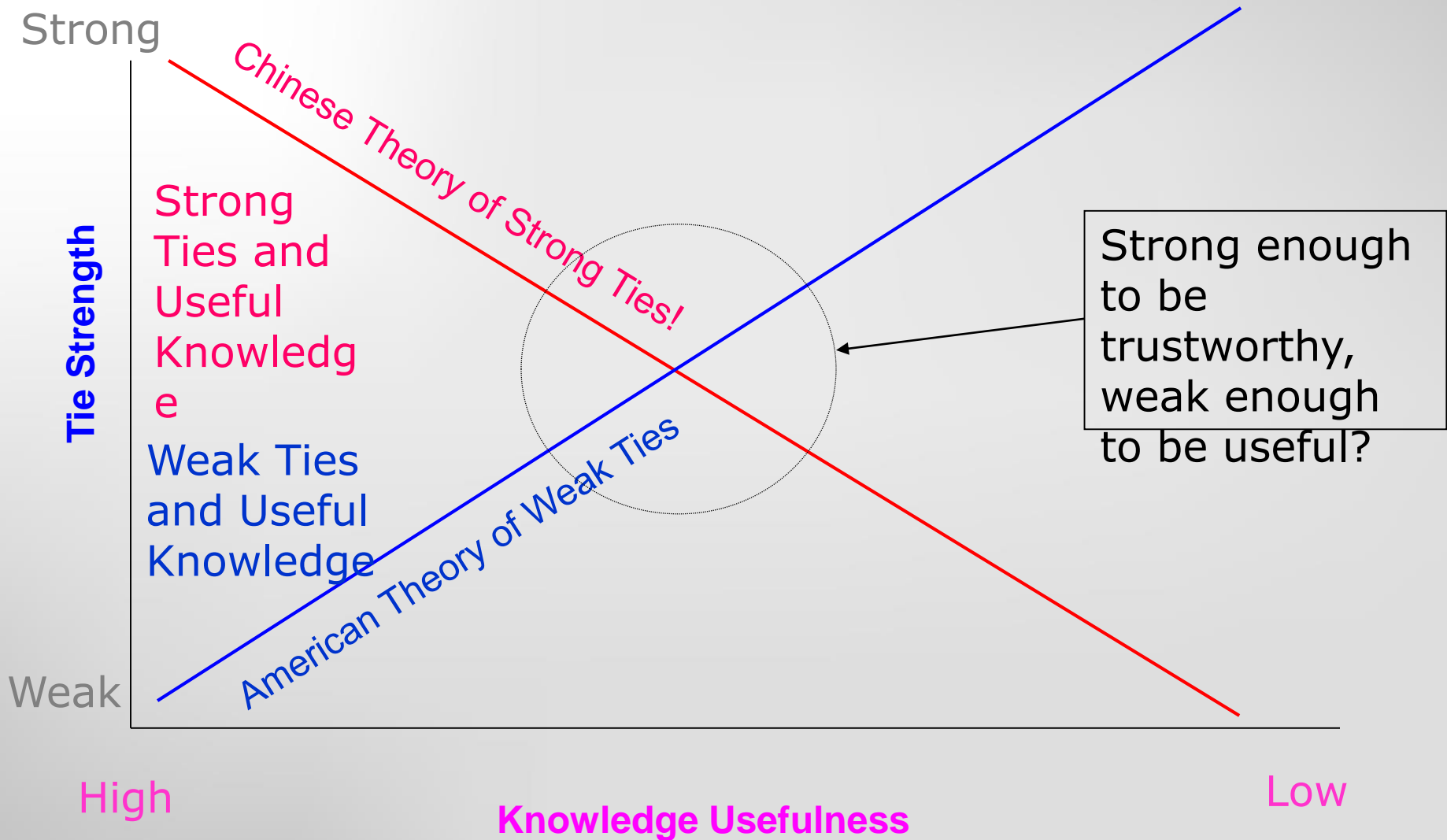
- We found that employees were interconnected through extensive networks of networks.
- We noted an interesting juxtaposition with the Theory of Weak Ties (TWT) (Granovetter, 1973)

RuderFinnAsia – Diagnosis 3

- For TWT, weak ties are better because people you are less familiar with should know more different things
- But for RuderFinnAsia employees and perhaps Chinese people more generally, it seems that strong ties are more reliable than weak

  - Confidence in information obtained from people you know and with whom you have stronger guanxi.

RuderFinnAsia - Action Plans

We explored a number of actions here, including:

- GoogleSites
        Access problems in China
- MS SharePoint
        Much more secure (some content is confidential)

We used a Balanced Scorecard to map these actions.

Management support for the proposed changes was strong – as was espoused employee interest.
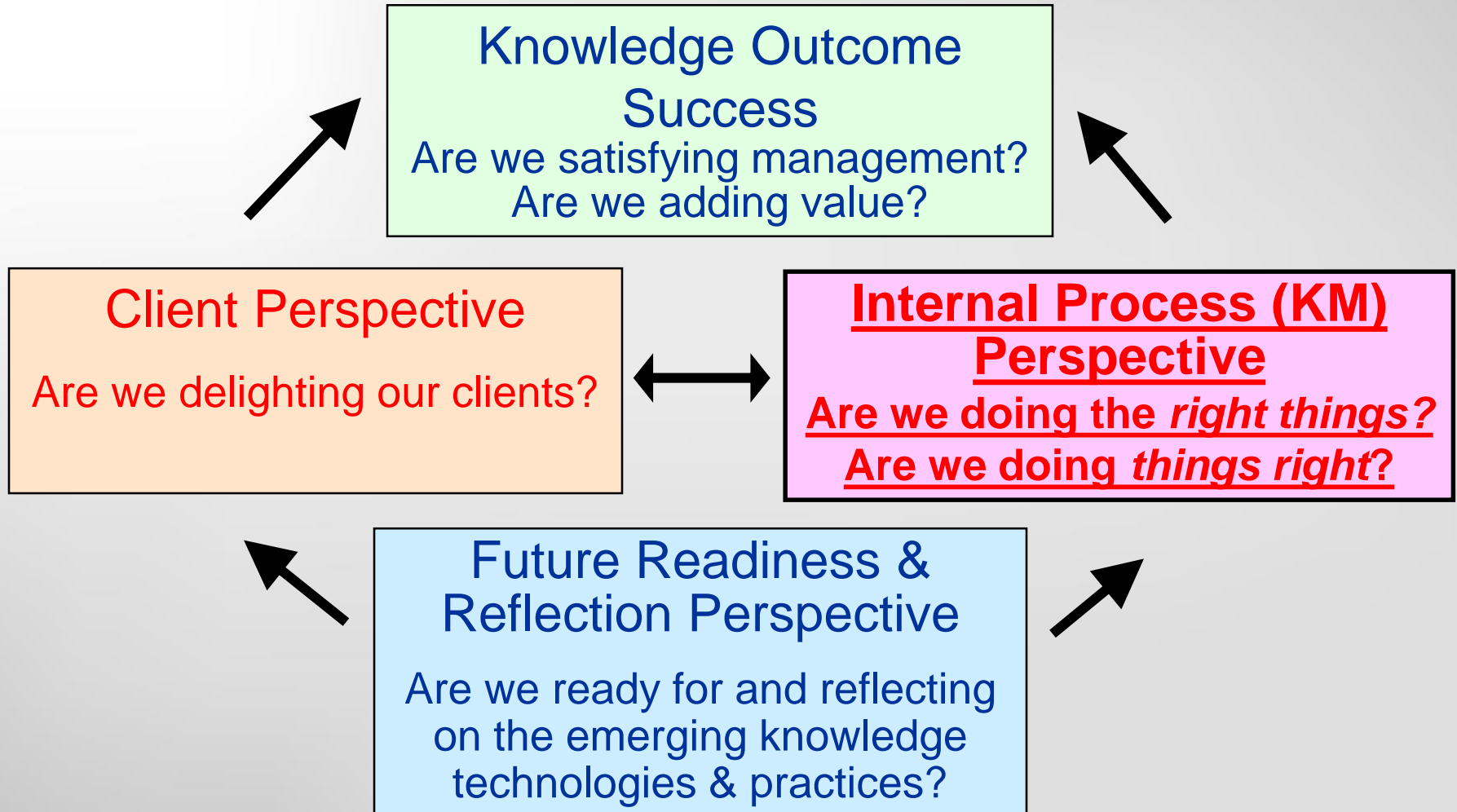
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In order to develop operational plans for, and later assess the impact of, interventions linked to an organisation's strategic direction, we employed a <u>Balanced Scorecard</u> (Kaplan and Norton, 1992)

Following the work with Eastwei, the researcher learned that the first predictive theory was inappropriate, so she changed it and, following a fresh round of theorising, adopted a new theory.

BSC

- The BSC is designed to measure whether an organisation's smaller-scale operational activities are aligned with larger-scale objectives.
- The BSC is notable for focusing on financial outcomes, internal processes, customer satisfaction, and future preparedness.
- These four perspectives are linked.
- Within each perspective, managers are expected to identify one or more: objectives, initiatives, targets and measures.

A Balanced Knowledge Scorecard

Knowledge Outcome Success
Are we satisfying management?
Are we adding value?

Client Perspective
Are we delighting our clients?

Internal Process (KM) Perspective
Are we doing the *right things?*
Are we doing *things right*?

Future Readiness & Reflection Perspective
Are we ready for and reflecting on the emerging knowledge technologies & practices?

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Action Plan Scorecard – Internal Work Processes

Objectives	Targets	Measures	Initiatives
Enhance the effectiveness and efficiency of a work team by: • Ensuring the use of advanced knowledge sharing tools • Fostering the development of a Transactive Knowledge-Sharing Memory and Network across a whole team	All team members to access the knowledge sharing platform on a continuous basis for all communication functions, except email	Frequency of platform access by each team member (i.e. individual measurement) Number of knowledge contributions and downloads made by each team member Quality of knowledge shared (assessed by team leader)	Resource teams to undertake this project (including training) Ensure that Internet bandwidth is sufficient Ensure that all necessary KM tools are available Communicate the initiatives, measures, targets and initiatives clearly to all team members

Action Planning and the BSC

The 3rd criterion of Principle 2 reads "Were the planned actions based explicitly on the results of the diagnosis?".

- The planned actions should be designed to improve the organisational situation, including shorter and longer term actions at operational and strategic levels
- The BSC helps ensure that the plans are carefully conceived, and that suitable measures are identified.

Action Planning and Theory

The 4th criterion of Principle 3 reads: "Did the planned intervention follow from this theoretically based model"

- This theory or theoretically based model may change as the project progresses, as the problem is re-diagnosed
- The theory that we applied in Eastwei was abandoned and a new theory was applied in RuderFinnAsia.
- Theory cannot be an absolute driver of the project. It too must fit the nature of the organisational context.

Implementation and Evaluation

The 4th criterion of Principle 2 reads: "Were the planned actions implemented and evaluated?"

- Evaluation of the intervention is more complex as it requires a comparison of before and after states.

- Depending on the evaluation, the Value Shop and BSC may need to be revised. E.g., some of the planned actions may be impractical, politically impossible, or otherwise inappropriate, particularly if unexpected consequences occurred.

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RuderFinnAsia – Intervention & Evaluation

- The MS SharePoint software has the right functionality, but employees were unwilling to use it
- The TM networks were still in operation – the software was not seen as enhancing them
- "Although I am not against the technology, I am not an IT person. If the software doesn't make my life a lot easier, I don't see why I should bother to use it – or encourage my team members to do so. It is just too troublesome to change an existing set of work practices" (RF Team Leader)

RuderFinn/Eastwei - Reflections

Senior management see potential economic value of good KM practices
This is not a view shared by employees
   They can always get the knowledge they need
   Knowledge is at their finger-tips via the
      informal, TM-IM system

- There is no point centrally archiving what is available online, on-demand
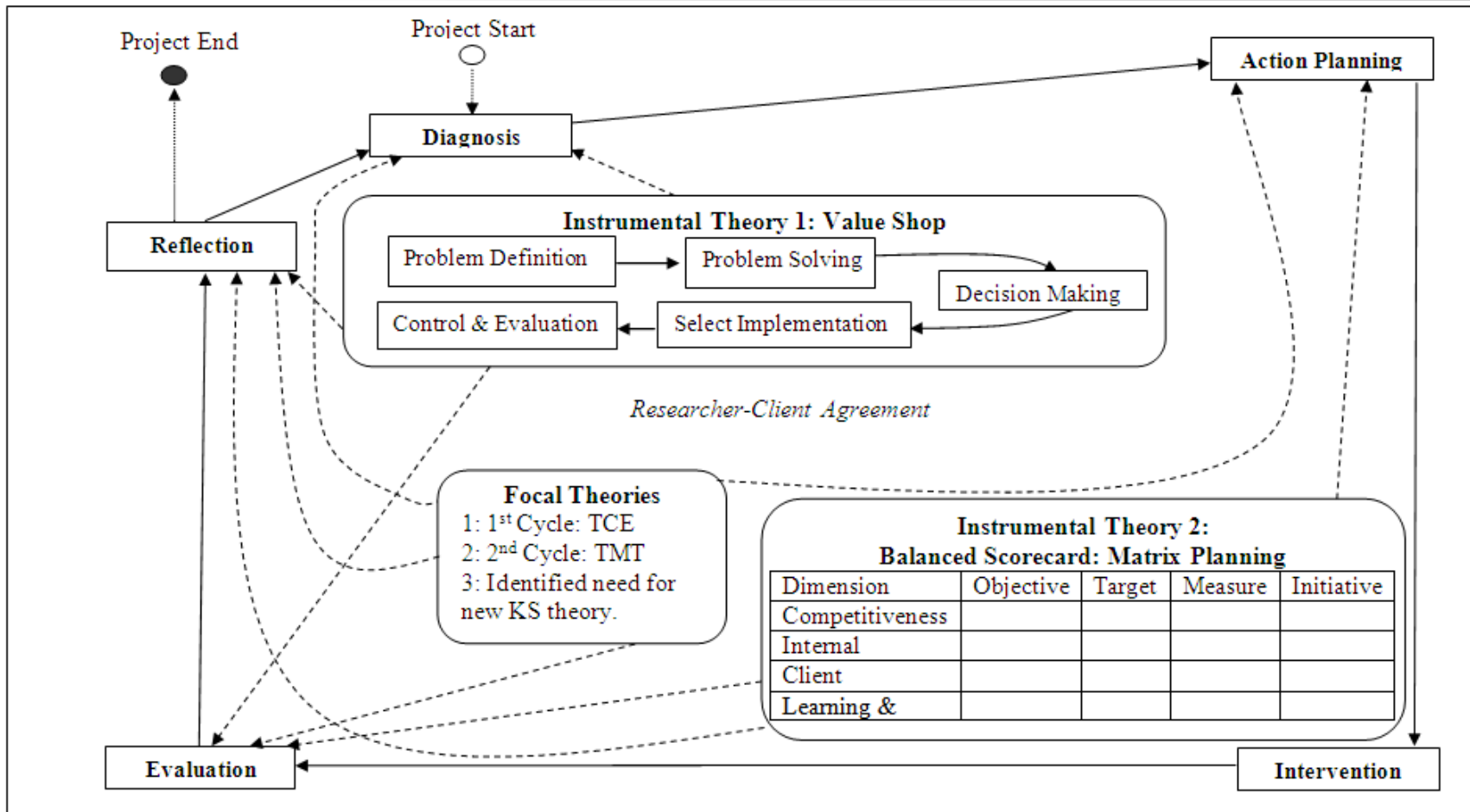It's a demand driven system, not supply driven

Reflections on KS Practices

- Existing knowledge sharing was widespread, informal and disorganised, yet effective in enabling employees to locate and use each others' knowledge.
- Instead of retrieving knowledge from a KMS, employees drew knowledge from each other as they needed it.
- Indeed, several employees expressed dislike for a formal KMS: too constraining, may reduce knowledge sharing.

Reflections on Theory

- We noted that the employee-centred approach corresponded with the principles of Transactive Memory Theory (TMT) (Wegner 1987), i.e. each employee relied on a network of other employees for knowledge.
- This reflection on theory was critical in our diagnosis and planning of actions in the second case that followed.
- We also realised that there was a need for a new theory of KS that included Chinese constructs

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Key: Rectangles represent the CAR process stages. Rounded-corner rectangles represent instrumental and focal theories. Solid lines represent the CAR cyclical path. Dashed lines represent the links between CAR process stages and instrumental or focal theories.

Concluding Thoughts

CAR is an emergent method

• It needs to be adapted to organisational circumstances
Good CAR will have strong theory

• Focal and Instrumental

CAR provides an excellent opportunity to undertake rigorous research into internal organisational processes, with a change-focused approach and the generation of both practical and scholarly knowledge

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