

# Structuring learning and innovation in a quality management system

--A case study of action research

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# Outlines

- ◆ Complex thinking, complex practice
- ◆ From dominant paradigm to complexity paradigm
- ◆ Is complexity feasible and workable ?
- ◆ How to harness the complexity ?
- ◆ Practical and theoretical implications

# Research field

- ◆ Taiwan Tobacco and Liquor Company (TTL)
- ◆ A state-owned cigarette company towards privatization
- ◆ A project to upgrade its product quality
- ◆ A manager, a consultant and a researcher

# Methodology

- ◆ Action research: criticism paradigm vs. positivism and interpretation paradigms
- ◆ Validity tested by the consequences of ongoing actions
- ◆ Action and reflection
- ◆ Conceptualized contribution to the knowledge of both practitioner and social science

# Quality recontextualization

- ◆ Quality ---the single most important force leading to the economic growth of companies
- ◆ the concept of quality has evolved from product, service to innovation.
- ◆ Recontextualization will occur when the context around quality changes.
- ◆ Cigarette quality will evolve in a complex, dynamic and non-linear way over time.

# First spiral actions

- ◆ Since September 2003
- ◆ Intensive courses and workshops with senior management members
- ◆ self-regulated QC system, revision of control limitations, and a quality audit system
- ◆ Suppose that the objective expertise of effective quality system can be educated and transferred
- ◆ Is a top-down manner workable?

# Reflection during first spiral

- ◆ Product performance demonstrated that there is no significant improvement
- ◆ Bureaucratic legacy still makes all the quality management functions work discretely and invalidly.
- ◆ CEO found that change the mental model is emergent and significant.
- ◆ The lack of bottom-up motivation and commitment impeded the integrated development of quality capabilities.

# Second spiral actions

- ◆ Since the spring 2004, we were assigned to be in charge of the quality improvement activities.
- ◆ Emphasize participation and the interaction with the first line operators
- ◆ facilitate open conversations and improvise experiments
- ◆ Intensive weekly meeting in three months
- ◆ Enact crisis and promising vision
- ◆ cultivating or enabling self-organization

# Innovative behavior

- ◆ Simplify the increasing complexity
  - Complain the increasing workload to improve major input accuracy
  - Piece by piece modification nurture the positive minor process innovation
  - Simplify complicated tacit experience into low cost computer-aid system.
  - Proceed ongoing improvement in other minor inputs (butterfly effects)

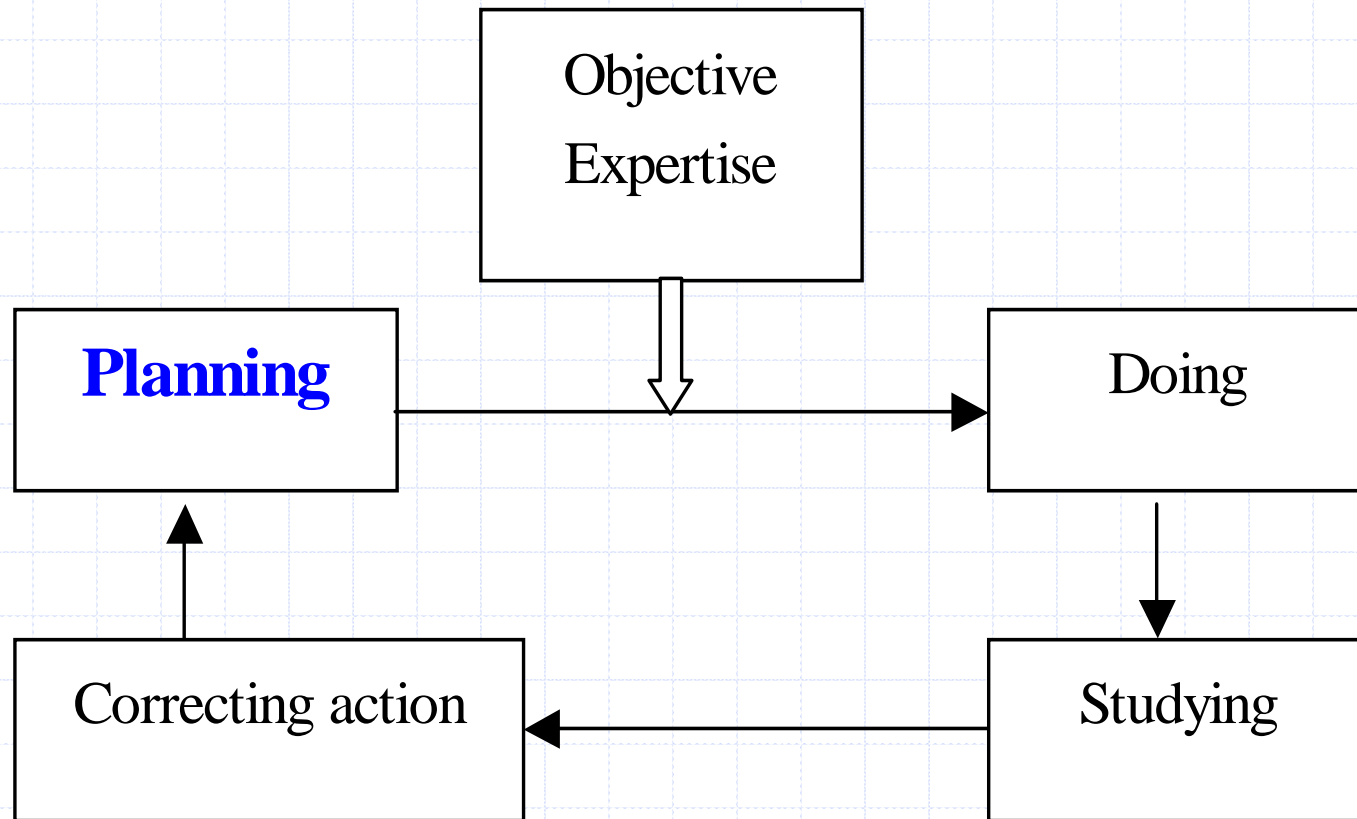
# Reflection during second spiral

- ◆ Insider action research can see first hand the nature of new local context and apply objective expertise iteratively
- ◆ Small improvements interplay and expand to develop learning and innovative capabilities over time.
- ◆ Learning and innovative behavior is requisite in an effective quality system
- ◆ It leads to generate new mental model through emergent and self-organizing processes

# Comparison of two spirals

- ◆ Dominant Plan-Do-Study-Act (PDSA) cycle postulate that optimal planning can initiate an effective improvement
- ◆ The negative feedback loop are standardized into the existing equilibrium system.
- ◆ The planned change cannot adapt to emergent event
- ◆ Better predictability and controllability, but helpless for nurturing innovative behavior.

# Comparison of two spirals

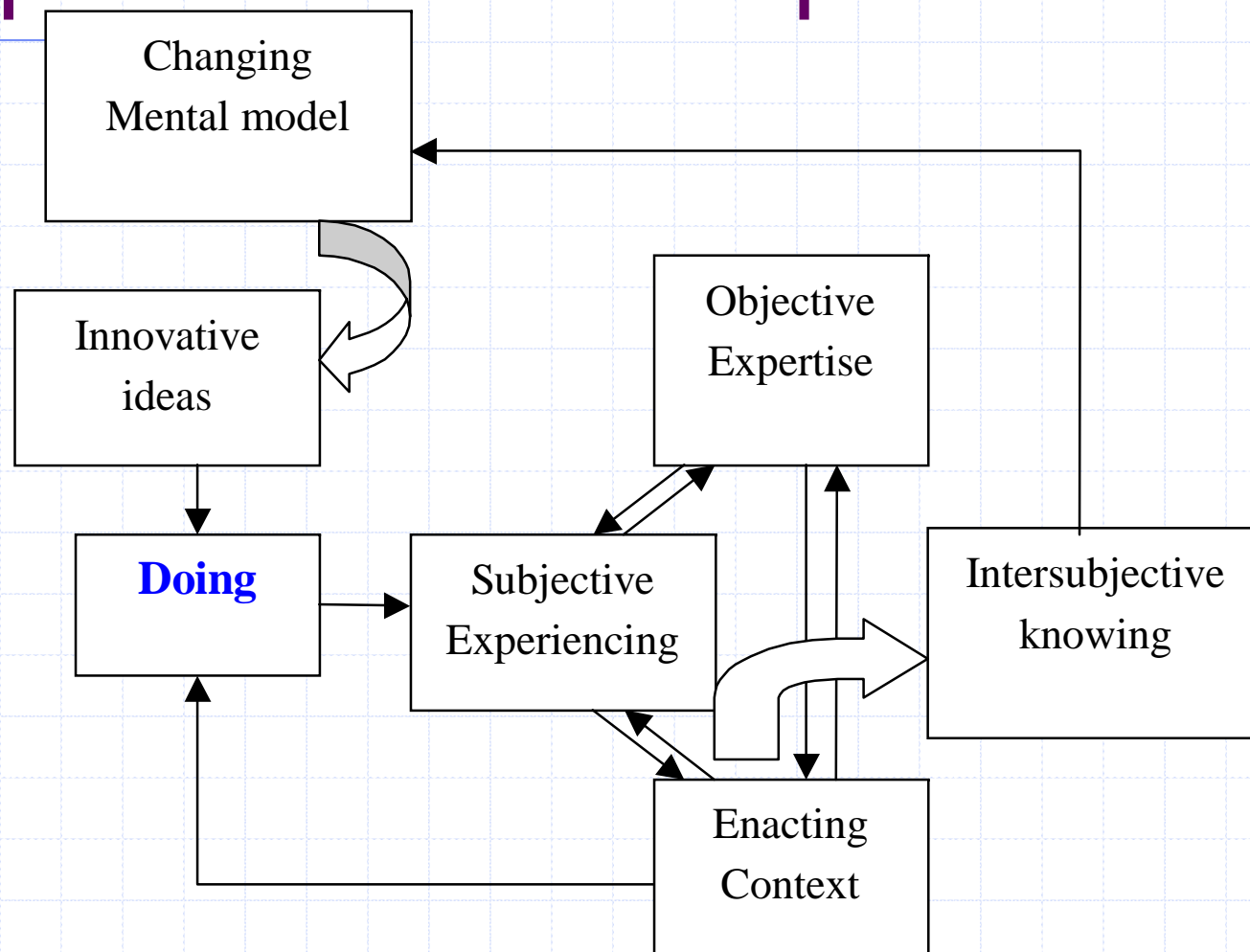


The single loop of PDSA cycle in first spiral

# Comparison of two spirals

- ◆ Doing first cycles
- ◆ Self-organizing process---iterative subjective experiencing and learning
- ◆ Emergent process 1---emerging intersubjective knowing among all the participants by interaction
- ◆ Emergent process 2---emerging innovative behavior through enacting context

# Comparison of two spirals



The double loop of DSAP cycle in second spiral

# Conceptualization

- ◆ To answer the research questions
- ◆ Emergent---the nature of organizing process
- ◆ Self-organization---the agency of organizing process
- ◆ Harnessing from defense mechanism to innovative behavior
  - process control mech.: meeting, review, commitment
  - containment mech.: Trust, empowerment, interaction

# Conceptualization

- ◆ Theoretical development
- ◆ Planning first cycle is bounded by backward logic (imperfect information).
- ◆ Improvement and innovation needs forward logic
- ◆ Doing first cycle combined with self-organizing and emergent process can effectively handle dynamic uncertainty
- ◆ Complexity may create a rational action theory to amend the bounded rationality of decision-making (planning)

# 921 Memorial---TTL

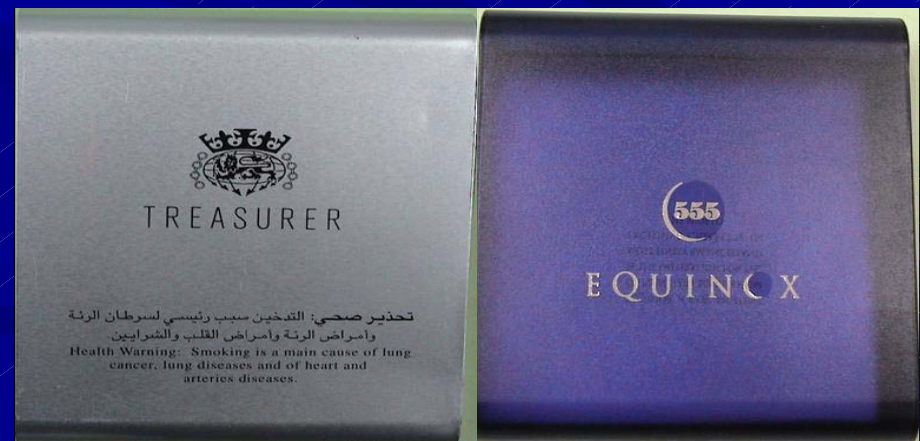


# Top tier cigarettes



Santa/Davidoff

Treasure/555 Equinox



# competition

Cigarette brand	Price	Market share
921 memorial	\$100 NT	60-65 ca/mn
Davidoff Magnum	\$200 NT	30 ca/mn
Dunhill Top Leaf	\$100 NT	5 ca/mn

# Conclusions

- ◆ Present an illustration of applying complex thinking in real business context
- ◆ Effective process involves the paradox of triggering and containing anxiety.
- ◆ In the future, promising and declining still are the both sides of a unified reality
- ◆ Action research is a complementary inquiry approach of complexity theory.
- ◆ The elements of action research sometimes occur concurrently, rather than sequentially.