

Knowing Your Research Contributions

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Agenda

- Dimensions of contribution
- Choice of dimensions
- Formulating a good paper
- Synthesizing the literature
- Classifying journals

Dimensions of Contribution

Definitions:

1. Paradigm
2. Theory
3. Concept
4. Model
5. Construct
6. Ontology
7. Conceptual model
8. Theoretical model
9. Triangulation



Dimensions of Contribution

1. Problem
2. Context
3. Unit
4. Paradigm / Theory / Concept
5. Model
 - Construct
 - Ontology
6. Method
7. Data (number / text)
8. Time

Types of Problem

- Problem (phenomenon / story)
 - New / novel / community interest
 - Old (longitudinal, meta analysis)

Types of Context

- Context
 - Location / culture / policy
 - Single (the same)
 - Multiple (different)
 - Gender
 - Male
 - Female
 - Other context

Unit (Granularity) of Analysis

- Individual
- Group
- Organization
- Enterprise
- Industry
- Nation
- Region
- World

Paradigm / Theory / Concept

- Paradigm / Theory / Concept
 - Old vs. New
 - Single vs. Multiple
 - Incremental vs. Radical change of theory
 - Waterfall vs. Spiral software development
 - Data center vs. End user computing
 - Pull vs. Push manufacturing process
 - Output-driven vs. Process-driven quality control

Model - Type of Innovation

Linkage Between Constructs (Ontology)	<u>Core Concepts (Constructs)</u>	
	Reinforced	Changed
Same	<u>Incremental Innovation</u> <ul style="list-style-type: none"> • Replicate results for the focal relationship(s) in a new context • Extend by adding peripheral construct(s) 	<u>Modular Innovation</u> Define, measure, or analyze one or more core constructs in a new way
Different	<u>Architectural Innovation</u> <ul style="list-style-type: none"> • Examine a new situation or context in which the nature of the focal relationship(s) may be different • Examine the role of a new construct that may moderate the nature of the focal relationship(s) ? 	<u>Radical Innovation</u> Introduce a new conceptualization that replaces and changes how we think of the old construct(s) and relationship(s)

Source: Voss, G.B. Formulating interesting research questions. *Academy of Marketing Science. Journal*, 31(3), Summer 2003, pp. 356-359.

Method / Process / Technology / Algorithm

- Single vs. Multiple (Triangulation) vs. Integrated
- Old vs. New

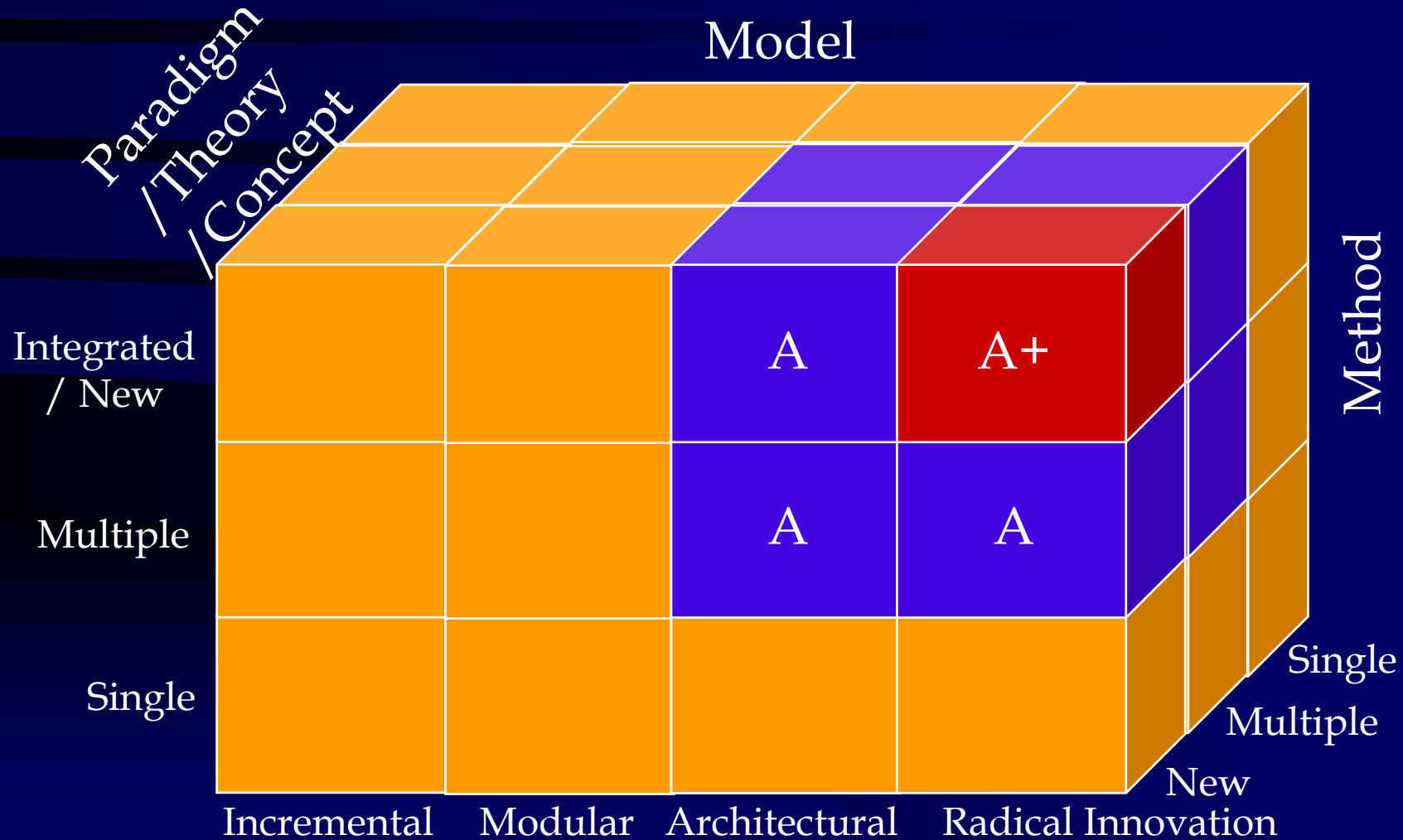
Types of Data

- Quantitative (empirical / experimental data)
- Qualitative (field study / case data)
- Mixed

Types of Time Period

- Single period, cross-sectional
- Multiple periods:
 - Intervals (longitudinal)
 - Series (time series)

Choices of Dimensions



Formulating a Good Paper

- Novel problem
- New perspective
- Innovative model
- Disciplined methods
- Rich data

Formulating an Ideal Paper

- Different problem / novel story
- Multiple contexts
- Multiple units
- New paradigm
- New theory / concept
- Radical model innovation
- Integrated or new method / process / technology / algorithm
- Mixed data (qualitative and quantitative data)
- Multiple time periods (longitudinal or series)

Synthesizing the Literature

	Problem		Context		Theory			Model			Method			Time			Unit (quaN. / quaL.)								
	Old	New	Single	Multiple	Single	Multiple	New	Incremental Innovation	Modular Innovation	Architectural Innovation	Radical Innovation	Single	Multiple	Integrated / New	One	Intervals	Series	Individual	Group	Organization	Enterprise	Industry	Nation	Region	World
Citation																									
Davis [1]		✓	✓			✓				✓		✓						N							

Classifying the SSCI Journals

Journal	Problem		Context		Theory			Model			Method			Time			Unit (quaN. / quaL.)								
	Old	New	Single	Multiple	Single	Multiple	New	Incremental Innovation	Modular Innovation	Architectural Innovation	Radical Innovation	Single	Multiple	Integrated / New	One	Intervals	Series	Individual	Group	Organization	Enterprise	Industry	Nation	Region	World
MgtSci	✓	✓	✓	✓		✓	✓		✓	✓		✓	✓			✓	✓	N	N	N	N				
Davis [1]		✓	✓			✓				✓		✓			✓		N								
DSS	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	N	N	N					
AMJ	✓	✓		✓		✓	✓			✓	✓		✓	✓		✓	✓	N	N	N	N				
HBR		✓		✓			✓			✓		✓	✓	✓	✓	✓					L	L			L
CACM		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓				N	N	N			N

Recommendation

Know your contribution
to target a journal.

Resources

- Theories used in IS research
(<http://www.istheory.yorku.ca/>)
- Association for Information Systems Network
(<http://www.aisworld.org/>)

Thank you!

Q & A

What is a “paradigm”?

- A philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated.
(Merriam-Webster's Online Dictionary)
- A system of thought, worldview, perspective, mindset, (thinking outside) the box
- e.g., positivism, experience economy, BPR, Isaac Newtonian mechanics, Albert Einstein's mechanics, “The earth is round”, “The world is flat”, epistemology (認識論), etc.

What is “Epistemology”?

- **The branch of philosophy that studies the nature of knowledge, its presuppositions and foundations, and its extent and validity.**
- **Epistemology is concerned with the definition of knowledge, the sources and criteria of knowledge, the kinds of knowledge possible and the degree to which each is certain, and the exact relation between the one who knows and the object that is known.**
- **The rationalists favored deductive reasoning based on self-evident principles. Plato stated that only abstract reasoning yields genuine knowledge, whereas reliance on sense perception produces vague and inconsistent opinions.**
- **The empiricists leaned toward sense perception and regard knowledge as an instrument of action to be judged by its usefulness in predicting experiences.**

What is a “theory”?

- Systematically organized knowledge applicable in a relatively wide variety of circumstances, especially a system of assumptions, accepted principles, and rules of procedure devised to analyze, predict, or otherwise explain the nature or behavior of a specified set of phenomena.
(American Heritage Dictionary)
- e.g., Icek Ajzen’s *theory of planned behavior*, Anthony Giddens’s *structuration theory*, Albert Einstein’s *special theory of relativity*, Isaac Newton’s *theory of universal gravitation*, etc.

What is a “concept”?

- Something conceived in the mind; an abstract or generic idea generalized from particular instances.
(Merriam-Webster's Online Dictionary)
- e.g., subjective norm concept, total quality concept, etc.

What is a “model”?

- A schematic description of a system, theory, or phenomenon that accounts for its known or inferred properties and may be used for further study of its characteristics.
(American Heritage Dictionary)
- e.g., TAM, DeLone & McLean’s ISS model, etc.

What is a “model”?

- **Theoretical model:** A model developed from a theory or a group of related theories.
- **Conceptual model:** A model developed from a concept or a group of related concepts.

What is “Triangulation”?

- Under qualitative research, triangulation is a process of using multiple methods to ensure the accuracy and credibility of research findings.

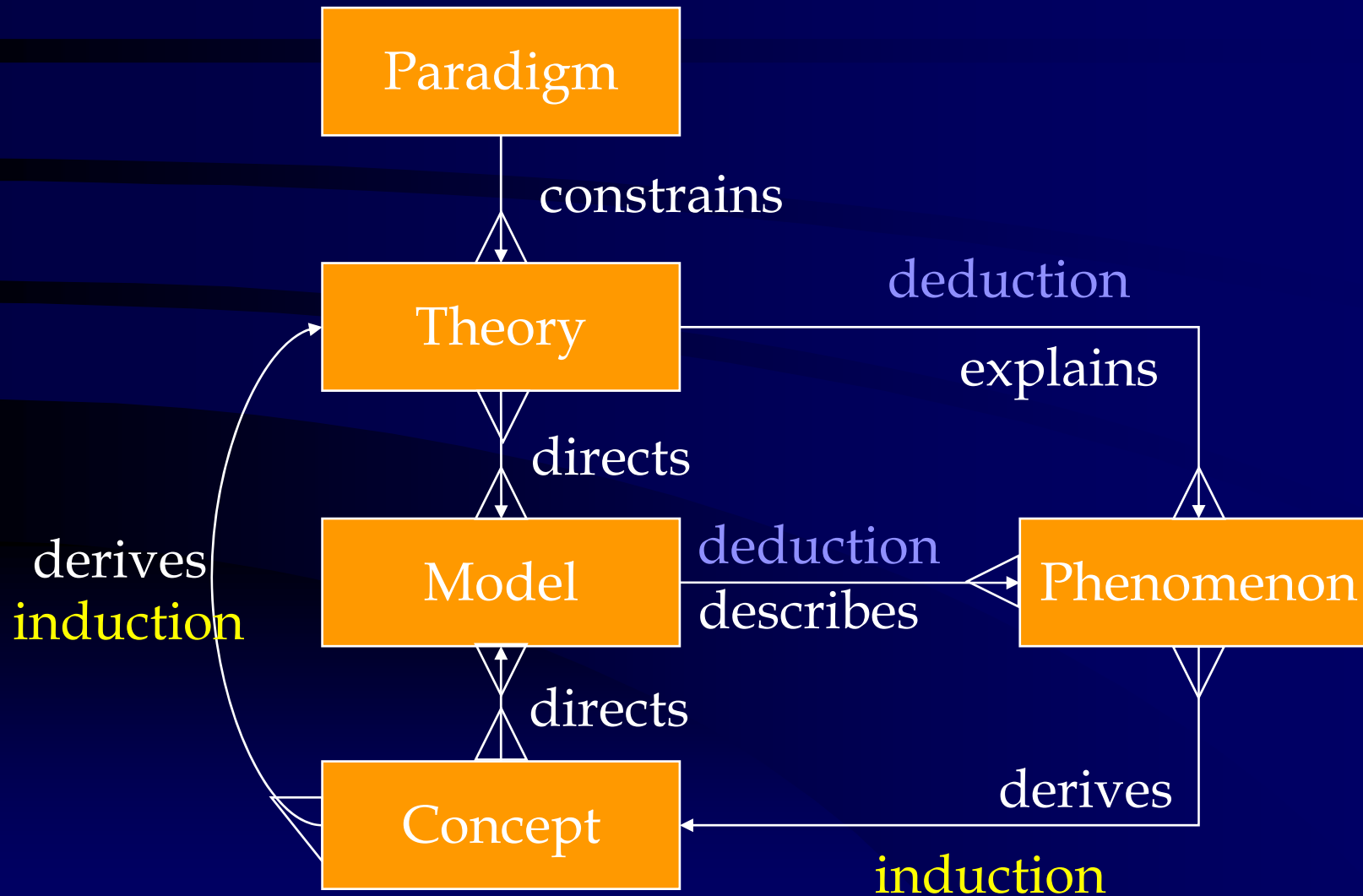
What is “Triangulation”?

Types of Triangulation:

- **Data triangulation:** combining a variety of data sources and checking the consistency of the different sources (such as samples from two different companies),
- **Investigator triangulation:** using several researchers, analysts, or evaluators to review the findings,
- **Theory triangulation:** using multiple perspectives to interpret the data (such as TPB and TAM),
- **Methodological triangulation:** checking the consistency by using mixed methods of data collection and analysis (such as qualitative and quantitative).

Source: http://en.wikipedia.org/wiki/Triangulation_%28disambiguation%29#In_research

Schema of Abstraction



The Logic of a Research Process



System Research

- **Observations**
- **Problems**
- **Propose systems**
- *Construct systems*
- *Validate systems*
- *Evaluate systems*
- *Conclusions*

Design Research

- **Design needs**
- **Propose designs**
- *Build designs*
- *Validate designs*
- *Evaluate designs*
- *Conclusions*

Theory Building Research

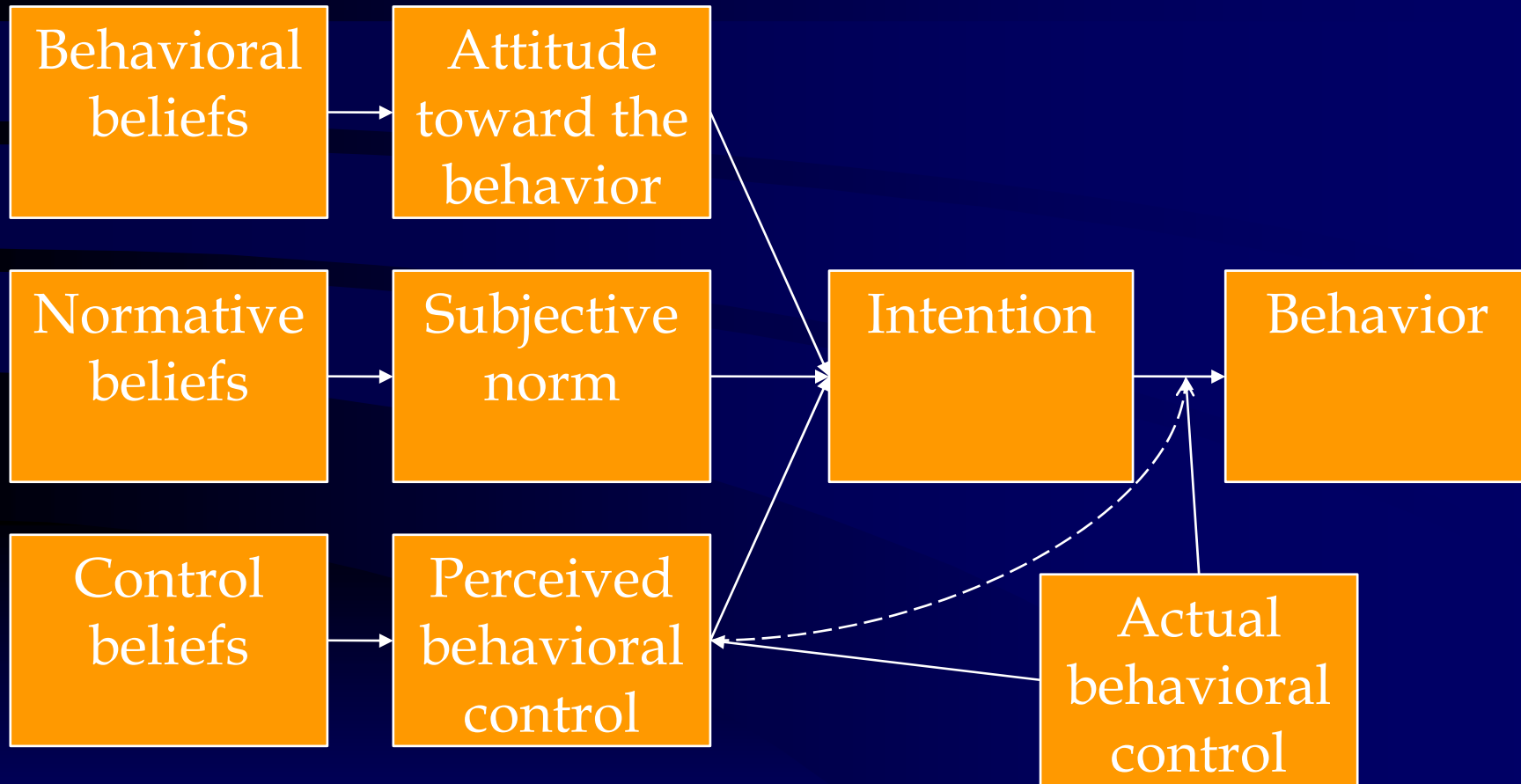
- **Phenomena**
- **Literature reviews**
- **Propose theory/concept**
- **Propose models**
- *Propose propositions*
- *Justify propositions*
- *Conclusions*

Model Building Research

- **Problems**
- **Literature reviews**
- **Propose model**
- **Propose hypotheses**
- *Collect and validate data*
- *Test hypotheses*
- *Conclusions*

Deduction
Induction

Theory of Planned Behavior

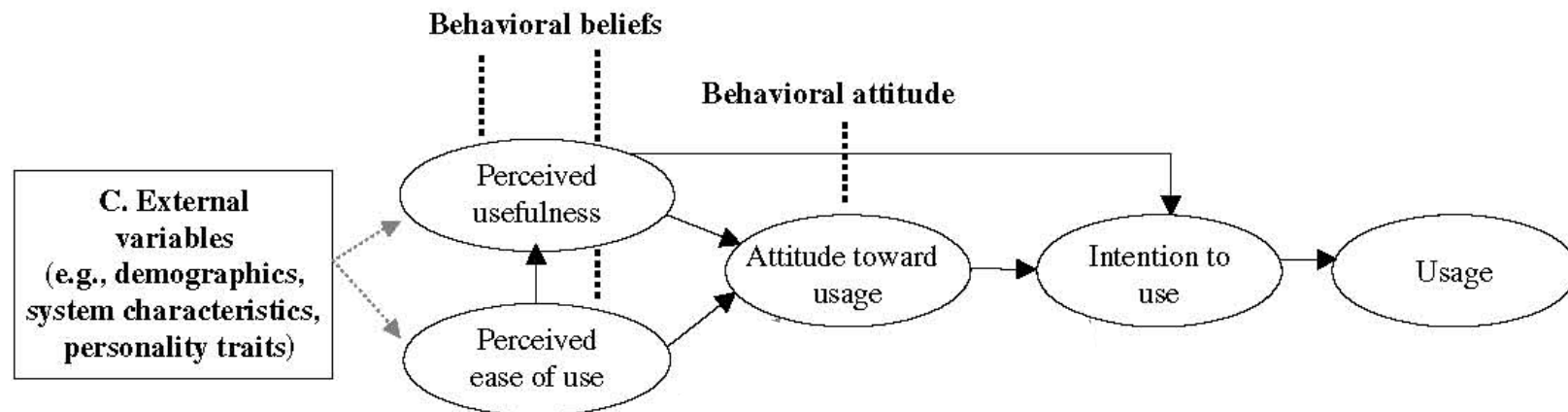


Source: <http://www.people.umass.edu/aizen/tpb.html>

Architectural Innovation



Figure 1 The TAM (Davis 1989) and Three Popular Extensions



Source: Wixom, B.H., and Todd, P.A. A theoretical integration of user satisfaction and technology acceptance. Information Systems Research, 16, 1 (2005), 85-102.