



# Information Systems, Technology Adoption and Innovation Translation

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## ABSTRACT

*A new Information System must be adopted before it can be used. New Information Systems can be seen as innovations and viewed through the lens of innovations theory. In this article I will argue that much Information Systems research falls into this category, and that its explanation could benefit from application of innovation theory. One of the difficulties facing any such investigation, however, is that not all of these innovations are adopted in the form in which they were proposed – not all are adopted without change, and many approaches to technological innovation have trouble in explaining this. I will propose that Innovation Translation, informed by Actor-Network Theory, can offer a useful way of examining technological innovations, and particularly in explaining adoptions involving only some parts of the innovation. In this article I give several examples of how I have used Innovation Translation to shed light onto various technological innovations.*

**Keywords:** *actor-network theory; information systems; innovation translation; technological innovation*

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## INFORMATION SYSTEMS AND INNOVATION

A significant amount of research in the discipline of Information Systems (IS) involves an investigation of the implementation, adoption and use of new or updated systems. In other words it involves studies in technological innovation, and in this article I will argue that research like this should be viewed through the lens of innovation theory and that Innovation

Translation provides a suitable approach for doing so.

The process of innovation involves getting new ideas accepted or new technologies adopted and used (Tatnall 2005b). After the discovery of a new idea, or the invention and development of a new technology, it does not automatically follow that this will be adopted by its potential users. It is important at this stage to distinguish between invention and innovation. While invention involves the discovery or creation of new ideas or technologies, innovation

is the process of putting these ideas or technologies into commercial or organisational practice (Maguire, Kazlauskas and Weir 1994; Tatnall 2007c). The Oxford dictionary defines *innovation* as “the alteration of what is established; something newly introduced” (Oxford 1973) and is concerned with individual and business decisions to *adopt* new inventions (Tatnall 2007a). The study of innovation does not concern itself with inventors and the details of their inventions, but about individual and organisational decisions to adopt these new inventions. Invention does not necessarily invoke innovation, nor is invention necessary or sufficient for innovation to occur (Tatnall 2005b).

One of the difficulties faced in investigating the adoption of technological innovations is that not all of these innovations are adopted in the form in which they were proposed—not all are adopted without change. This raises the question of just what was adopted in each case if it was in some way different from what was proposed by its instigator. This article will examine, with examples, the issue of how technological innovations are adopted or rejected, and how they might sometimes be changed during the process of adoption.

## Models of Innovation

To investigate the adoption of new ideas or technologies it is useful to follow one of the theories of technological innovation as an approach to theorising how innovation takes place (Al-Hajri and Tatnall 2007; Tatnall and Dai 2007). Each of these approaches to innovation is based on the assumption that the potential adopters have some choice in the adoption and I will restrict my discussion to adoptions of this type. One important difference between some of the theories is

the degree to which the adoption decision is seen as completely rational, and whether provision is made for partial adoption. A brief discussion of the main approaches to theorising innovation follows.

### *The Theory of Reasoned Action (TRA)*

TRA (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980) integrated various studies on attitude from social psychology with the aim of developing an integrated conceptual framework to predict and explain an individual’s behavior towards adoption in a general situational setting. They postulated that an individual’s *behavioural intention* is the immediate determinant of behaviour, their *attitude* and *subjective norm* are mediated through behavioural intention and their behavioural and normative beliefs are mediated through attitude and subjective norm.

### *The Theory of Planned Behaviour (TPB)*

In TPB, Ajzen (1991) extended the Theory of Reasoned Action as he noted that it was designed to predict and explain behavior, or actions, based on the assumption that the behavior was under a person’s volitional control. Ajzen argued that some behavior that is not under a person’s volitional control might be problematic due to the differences in individuals’ abilities and in external forces. The modification to create TPB involved adding another construct called *perceived behavioural control*, which refers to an individual’s perception of the “... presence or absence of requisite resources and opportunities” (Ajzen and Madden 1986 :457) required to perform the specific behaviour.

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