

Defining Innovation
Or
The Elephant in the Room Exposed

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Fig 1.1: *Ce ne est pas un elephant*. Reproduced with permission. Anita K Milroy, Central Queensland University, 2015

Summary

This introductory chapter presents a concise definition of the word “innovation”, which will enable the development in further chapters of a consistent, coherent and comprehensive set of descriptions of the various activities that comprise the process of innovation. It briefly describes the two principal kinds of definition – *extensional* and *intensional*, the four criteria that need to be satisfied by a useful definition and the five “fallacies” of definition that need to be avoided. Examples of all concepts are provided.

- An [animated version](#)¹ of these concepts is available on YouTube.

Introduction

An attempt to *concisely* define “innovation” is a dangerous – but necessary – place to start this book.

Why dangerous? First, because it seems that *everybody* has their own – or favorite – idea of what “innovation” *is* and most people are reluctant to give up *their* particular definition. So I’m likely to be seen as trying to take away a precious personal possession and replace it with something less personal and therefore something that is likely to be less valuable.

Secondly, most people simply don’t like *concise* “dictionary” definitions. Invoking concise definitions is a sure party-stopper – they usually involve too many “whichs”, “whoms”, “thats” and appeals to historic precedent or lofty authority for most people’s liking. Conversations of this kind are often closed down with a comment like: “Well, that’s *my* interpretation – it works for *me* – ‘nuff said.”

So why am I embarking on a dangerous mission? Partly because I like ideas to be tidy, rather than messy if it is possible, but mainly because a lot of money and effort hinges on having some consensus over the definition of innovation. For example government programs often have eligibility criteria that specify “innovativeness” without clearly specifying what is meant by the word. Private companies invariably extol innovation, but do not inform their staff as to what activities it might apply.

Current examples of definitions of “innovation”

So, with the recent resurgence in interest in innovation – whatever it is – its definition has become a widespread issue. For example, in late 2015, a journalist² asked the CEOs of 22 of Australia’s largest companies what *they* meant by “innovation”. Here are a few of their responses:

- “Innovation means thinking about new ways to do business, improving productivity, lifting profitability and working more safely.” (Sam Walsh, Rio Tinto).
- “Innovation is change that adds value.” (John Borghetti, Virgin Australia).
- “Innovation is a culture (with) diverse, empowered teams working together creatively to make life simpler and better for our customers and

more productive for our shareholders.” (Ian Narev, Commonwealth Bank.)

- “It is the practical realization of a new idea, method or device.” (Richard Goyder, Wesfarmers).
- “The main source of innovation is the development of unique products.” (Jonathan Ling, GUD).

... and so on. The journalist listed 22 definitions – a different one for each CEO. Google has links to *hundreds of millions* more definitions like these. It is amazing many ways we can say much the same thing!

Most people wouldn’t fundamentally disagree with any of these definitions and further, they would say that they liked some of the definitions more than others, as they are rather like *their own* definition.

A useful parable

So what are we trying to achieve with a *concise* definition? By way of framing my response, let’s re-visit the [parable](#)³ of the group of blind men, the king and the elephant:

The king asked six blind men to tell him what an elephant looked like by feeling different parts of its body. The blind man who felt its leg said the elephant was like a pillar; the one who felt its tail said that it was like a rope; and so on – it was like a tree branch (the trunk); like a hand-fan (the ears); like a wall (the belly); or a spear (the tusk).

The king explained to them that they were all correct: The reason each of them was telling it differently was because each one touched the different part of the elephant. So, actually, the elephant had all the features mentioned.



Fig 1.2: *Blind Monks Examining an Elephant*. [Hanabusa Itcho](#)⁴ (1652-1724).

So, “innovation” is to the 22 CEOs what “an elephant” was to the blind men – none of them is “wrong” – they are just touching different parts of the same thing. This is “definition by pointing – or touching, in this case. But can we describe the “thing” in any other way than describing *all* of its parts?

So what is a “definition”?

To add to our challenge, it seems that there are many kinds of “definition” – there isn’t even a concise definition of “[definition](#)”⁵! While this book is not the place to get bogged down in pedantic distinctions, we must be clear about what sort of definition might satisfy us. For our purposes, we are trying to establish an “intensional” definition of innovation, which specifies the *necessary and sufficient* conditions or attributes for a “thing” to be clearly identified as a member of a specific “set”, or “class” of things. On the other hand “extensional” definitions are a list of every object that is a member of a specific set. The 22 “definitions” mentioned above, or the more than 222 *million* “definitions” found through Google could be considered “extensional” – pretty well every thing that could be considered as an “innovation” is surely covered.

Avoiding the five fallacies of “definition”

The challenge with “intensional” definitions is to agree on the particular attributes that are “necessary and sufficient”. Further, the definition should endeavor to avoid the “[five fallacies of definition](#)”⁶:

- 1 A definition must *set out the essential attributes* of the thing defined;
- 2 *It should avoid circularity*. For example, to define a horse as "a member of the species *equus*" would convey no information whatsoever;
- 3 *It must not be too wide or too narrow*. It must be applicable to everything to which the defined term applies (i.e. not miss anything out), and to nothing else;
- 4 *It must not be obscure*. The purpose of a definition is to *explain* the meaning of a term that may be obscure or difficult, by the use of terms that are commonly understood and whose meaning is clear.
- 5 *It should not be negative where it can be positive*. We should not define "wisdom" as the absence of folly, or a healthy thing as whatever is not sick.

An operational definition

We can avoid the danger of being dragged into a semantic quagmire by taking a different approach than the blind men’s “naming of parts” – this is called an [operational definition](#)⁷ – a statement that is more like defining an *action* than an *object*. Many of the 22 definitions referred to go part of the way to being operational, as they imply that innovation is “that which”, or “some-thing” that causes a particular outcome. For example:

- “Innovation is change that [which] adds value.”
- “Doing things differently [that which] to deliver better outcomes.”

So we can glean from these definitions that innovation has the following essential attributes:

1. It is *something* that is *new*, or at least new to the innovator;
2. It involves *doing* something, ie it is a “process”;
3. The “process” involves *changing* something;
4. The “changed something” is *intended to be beneficial* to somebody.

Arriving at a concise definition

So – we can now make an attempt at a concise, operational definition that combines these four essential attributes:

Innovation is the process of transforming an idea into something that works.

Let’s examine this definition in the light of the four attributes of good intensional definitions:

- *Attribute 1* is covered by the word *idea*. It could be *new idea*, but that is essentially, a tautology, as any idea that isn’t new, is just a *memory*;
- *Attributes 2* and *3* are covered by the *process of transforming*. We could say *the transformation of*, or *the processing of*, but the slight tautology here allows us to focus on what is entailed in the *process* and the *type* of change; and
- *Attribute 4* covers the *outcome: something that works*. We should note, at this stage, that the “outcome” is not necessarily a tangible new product – it may be a new *series of actions* that are beneficial to someone – ie a “service”. It *works on something* or *for somebody*. Importantly, *size does not matter*. Innovations maybe confined to one office, workshop or kitchen, or affect millions of people.

Although this definition covers the four essential attributes and avoids the five fallacies, does it satisfy anybody? Possibly not, without further embellishment – which is the intention of this book. All of the particular cases have been relegated to being examples of the general statement. As we shall see, these particular examples can be placed into a number of categories so that they can, in turn, be dealt with in detail.

For example, as many of the definitions of innovation refer to “added value”, “increased productivity”, “profitability”, “simpler life”, etc., one might think that the definition should end with “... something that works *better*.” But, as a later

chapter will show, “better” is a value-laden word and opinions often differ as to whether the outcome of the innovation process is “something better” than whatever it is compared with.

What is included and excluded from our definition?

A final aspect of establishing a definition is to provide examples. There are two kinds – examples of what is *included* in the definition and examples of what is *excluded*. Included, as we have implied, are new goods and services of all kinds. What we will exclude is very important. There are two categories:

1. *Inventions*. An invention is an idea, or new idea. This is what *the process of innovating* transforms into *something that works*. The notions of invention and innovation are frequently conflated, that is, considered to be the same thing. This may suit some people, but in our case we consider an invention as the “thing” to which the process of innovation is applied to make “something that works”. Our definition is like saying:

“Smelting” (innovation) is the process applied to iron ore (an idea or invention) to make steel (something that works).

Invention can be considered as a separate event or process – the initial idea may be only partly formed and only broadly described before innovation commences, or it may be fully formed at the moment that it becomes a conscious thought – like Athena springing from Zeus’s head. The detailed development of the idea may be concurrent with innovation process, but the initial idea – the *conceiving* of a “something” that is beneficial to somebody – must precede innovating. Fully articulated ideas are usually called “intellectual property” – a subject to which we will return later.

2. *Diffusion or adoption*. This is the process of taking our “something that works” and applying it to the thing or situation that we want it to work on. In simpler terms, it is the application of our innovation to a “market”. That market might be just one person or one application, but often it is considered to be a number of applications in a number of instances. Again, while the process of diffusion often overlaps with the process of innovation, the activities involved in achieving widespread adoption of a new product or process are fairly distinct from the processes of innovating an idea to the point that it is considered to “work”. The existence of Everett Rogers’ landmark book [*Diffusion of Innovations*](#)⁸ is perhaps sufficient to make the case for asserting the distinction.

Conclusion

So, in summary, we can see that we have created a concise definition of innovation, which covers all of the essential attributes of the activity and is conceptually distinct from other activities. The consequences and implications of this definition are the principal subject of this book.

As a last note

There seems to be no known record of the king's concise definition of an elephant. The usual definitions of an elephant, including [that of Wikipedia](#)⁹, commit Fallacy #2, above – ie are circular, stating: “elephants are large mammals of the family *Elephantidae* and the order *Proboscidea*”. It is doubtful that an *intensive* definition of an elephant is possible, other than citing the unique characteristics of its DNA sequence.

¹ <https://www.youtube.com/watch?v=vGCIwcJIpHk>

² Durie, John, *Bosses' Innovation Nation*, The Weekend Australian, December 5-6, 2015, p 31.

³ https://en.wikipedia.org/wiki/Blind_men_and_an_elephant

⁴ https://en.wikipedia.org/wiki/Hanabusa_Itchō

⁵ <https://en.wikipedia.org/wiki/Definition>

⁶ https://en.wikipedia.org/wiki/Fallacies_of_definition

⁷ https://en.wikipedia.org/wiki/Operational_definition

⁸ https://en.wikipedia.org/wiki/Diffusion_of_innovations

⁹ <https://en.wikipedia.org/wiki/Elephant>