

AN INTRODUCTION TO INNOVATION FOR ARBORICULTURE

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Arbor by Design

Introduction

Innovation has become the buzzword of the decade, with politicians, CEO's, business leaders, universities and consultants all using it. The arboricultural industry itself is adopting innovative technologies and approaches such as using drones to assist with inspections, holistic urban forest approaches to tree management, and the promotion of innovation through symposiums and tree climbing competitions.

But what is innovation and how can a business be innovative?

Innovation itself, is a word that can mean different things to different people. Definitions often include creativity, ideas, inventions and implementation. Searching for a 'definition of innovation' in Google, brings up nearly 180 million results, with thousands of definitions. While there is no consensus on definition, there is a consensus that to be a successful innovator, a business needs to develop its own understanding of what innovation means for them.

To assist in defining innovation, a business should understand the seven different areas of innovation that can provide a competitive edge in the market.

Areas of Innovation

Product Innovation

Product innovation is the development of a good or service that is either new, redesigned or significantly improved. (Williams 1999, World Bank & OECD 2013). Product innovation can include the invention of a new product, or changes in the design, construction, materials, technology, or quality of an existing product.

Successful product innovation is a process, one that starts with understanding what the business's core competencies are, is the product or service something people want, what is the benefit the product provides and how will the product be utilised or commercialised (Lanyan 2014, Lapan 2017).

To develop a product that people want, good quality customer research is critical. Engage with customers early and often about their needs and avoid assuming you know what the customer wants (Lanyan 2014). Continual testing of the market also allows a business to learn fast and fail fast, minimising costly errors and through research and concept design (Liedtka & Oglivie 2011).

Product innovation is evident throughout all areas of arboriculture. With the introduction of new tools, such as ascenders for accessing trees, new tree cultivars to meet changing environmental needs, structural cells and soils to modify the below ground environment and technology such as GIS data capture and the resulting tree inventories.

Technology Innovation

Often associated with computers or electronic products, technology innovation is actually the implementation of new scientific and technical knowledge to create value. This can result in the technology improving methods and processes as well as the physical tools, equipment and machinery used (Williams 1999).

Technological innovation is a result of a business's ability to conceptualise a marketable use for a new technology and its willingness to take ownership and develop the technology for market (Perez, Popadiuk & Coelho Cesar, 2017). The adoption of GIS technology for data capture is a good example of the need to be willing to develop the technology. Early adopters of GIS data capture had to learn how to manipulate cadastres, build forms for data capture specific to trees and correct GPS data to achieve accurate locations as the technology had not been developed to collect tree data.

Technological advances can also be incremental in nature, as with battery operated chainsaws. The advances in lithium ion technology in batteries has enabled the introduction of battery operated chainsaws into the commercial market and changes in processes for some tree pruning works. Steve Watt (2017, 17 Aug) confirmed that the increased capacity of battery chainsaws has led to the City of Stonnington being able to conduct some vegetation clearance works at night, minimising traffic disruptions and noise pollution for nearby residents.

Process Innovation

Process innovation involves new or significantly improved methods of delivering a product or service. A process is a structured set of activities designed to produce a specific output, therefore innovation of a process can involve the use of new techniques, equipment or skills to improve either production or delivery activities (World Bank & OECD, 2013, Davenport, 1993).

Process innovation is a discrete initiative that is intended to achieve radical improvement for the business. Without a structured approach and a guiding vision, process innovation is often reduced to streamlining existing processes, resulting in incremental efficiencies and savings, but no significant improvement or change to the business (Liedtka & Oglivie 2011).

Process innovation involves identifying the processes that will enable significant change and require innovation; mapping and understanding existing processes, developing a strategic vision and objective for the process change and then developing a prototype of the process for testing (Davenport, 1993).

A recent example of process innovation is the work that Banyule City Council is doing with its Occupational Health and Safety processes. In teaming with the Physiotherapy and Human Movement Clinic and Deakin University, Banyule has utilised human movement technology and research to map the stresses on the body when performing arboricultural works.

Banyule has then integrated this technology innovation with its Occupational Health and Safety processes. Utilising the technology to assess base line fitness of job applicants, develop preventative strength training programs and improving manual handling training within the staff (Francis Pester, 2015). Paul Fitzgerald of the City of Banyule (2017, 14 Aug) also confirmed that this work on human movement has influenced standard operating procedures, procurement of plant and manual handling aides and improved self-management and recovery times with staff.

Service Innovation

Service innovation is changing the way you serve or interact with your customers to deliver more revenue and create greater value for your customers. This can occur through the creation of a new service, or a shift in focus to the customer and their experience. Service innovation must align with the core purpose of the company and meet the needs of both current and future customers. (Bradt 2013)

One technique for service innovation is to create a service blueprint. This technique focuses on a particular customer group or experience that the business delivers, and models the business interactions from start to completion. The blueprint maps five areas; customer actions, employee actions front of house, employee actions back of house, support processes and physical evidence of interactions (Bitner et al 2008). Successful blueprinting can lead to innovations that improve accessibility, responsiveness, convenience or encourage greater customer engagement.

An example of a service innovation is the adoption of policy allowing economic compensation for the removal of publicly owned trees. With an increase in focus on high density housing there has been a growing conflict between developers and public tree managers, as the presence of existing trees can impede, or even halt, a proposed development. At the same time, many communities were protesting the removal of trees for private development.

To facilitate a solution, a number of Local Governments have adopted amenity valuation methods (City of Melbourne 2016, City of Bayside 2016) to place an economic value on trees that inform decisions on whether a tree is to be retained or can be removed, if compensated for economically.

This has improved the outcome for customers by enabling developers to remove trees if the compensation is paid, or alternately justify a case for redesign of a project if the value of the tree is too high. The wider community has also gained greater confidence that the removal of the tree will not result in a net loss of urban forest and that revenue exists to sustain the tree population.

Marketing Innovation

Marketing Innovation is the implementation of a marketing method, for new or existing products, that represents a significant departure from the firm's existing methods (OECD, 2005). This can include changes in product design, packaging, placement, pricing or promotion. Marketing innovation requires, and ensures, brands are customer-centric and enables customer relationships and experience to be improved (Hong, 2015).

There are two areas of marketing innovation that are being embraced today, these are relationship building through content marketing and looking to turn a crisis into an opportunity.

Content marketing is about moving beyond the traditional sales pitch and publishing or sharing relevant information, ideas and entertainment. Social media has enabled the rapid uptake and success of content marketing, providing accessible platforms to connect with customers and build relationships in real time, while reinforcing the business's brand and message (Jutkowitz, 2014).

A fantastic example of building relationships and engaging the public is the City of Melbourne's emails to the trees. Initially developed as a service innovation to enable the community to email in reports of ailing trees or vandalism (Ley, 2015), the community responded unexpectedly, engaging on a personal level with the trees, emailing individual trees with their thoughts and observations around the tree. This enabled the City of Melbourne to improve community engagement with trees and raise awareness of the goals of the city's Urban Forest Strategy (Ley, 2015).

The second area, turning a crisis into an opportunity, is not easy. Based on the concept that 'companies can't control what people do with their products, but they can control how they respond' (Hunkler, 2017, Liedtka, J Oglivie, T 2011) it involves thinking of creative, innovative responses that done well can build brand loyalty, educate and engage your customers.

The City of Melbourne again, provides an example of turning a crisis into an opportunity. In 2013 the City of Melbourne was confronted with a case of a tree being poisoned to facilitate a private development.

To highlight the issue, and gain public support to implement stringent new charges for trees removed for private development projects, the City of Melbourne engaged two artists to create an installation with a prominent city tree after it had been poisoned. The artists created the 'Triage Tree', bandaging the entire tree to emphasise the damage done.

The Manager of Arboriculture, Ian Shears, confirmed that the initiative proved successful in engaging the community, with members of the public leaving condolence cards and flowers at the tree and ultimately providing support for the adoption of a policy that allowed for the amenity value of the tree to be collected in such instances (2014, July).

Business Model Innovation

A business model describes how a business creates, delivers and sustains profit margins and growth (Osterwalder & Pigneur, 2010). Business model innovation is about creating a new market or disrupting the competitive advantage of key competitors by aligning your resources, processes and profit formula with a new value proposition (Euchner & Ganguly, 2015, Rosen 2016). Done well it can create new revenue streams and result in a new way of engaging with customers.

To provide clarity when thinking about a business model, the business model canvas was created. The business model canvas (Figure 1) identifies nine components to a business model, with each component offering opportunities for innovation and the creation of new value for a company (Osterwalder & Pigneur, 2010).

Examples of business model innovations within arboriculture were not easy to find, however one of the most successful business model innovations in recent years is Nespresso.

In 2000 Nespresso set about redefining their business model canvas. Starting with customising their product to enable individual tastes to be catered for, customers would buy a machine and then purchase individual portions of coffee in a range of flavours, creating a unique product for the market. Nespresso developed new partnerships to manufacture and retail the espresso machines, retaining the production and marketing of the coffee in line with their core competencies. The company then redefined their distribution system, moving orders on line and reducing their emphasis on retailers to exclusive boutiques. (Osterwalder & Pigneur, 2010).

Nespresso's new business model was unique, difficult to imitate and aligned with the company's core competencies, which provided the company with a sustainable market positioning. This created a clear value creation and capture system for the company that has resulted in gross margins of around 85% and an average annual growth of over 35% (Osterwalder & Pigneur, 2010).

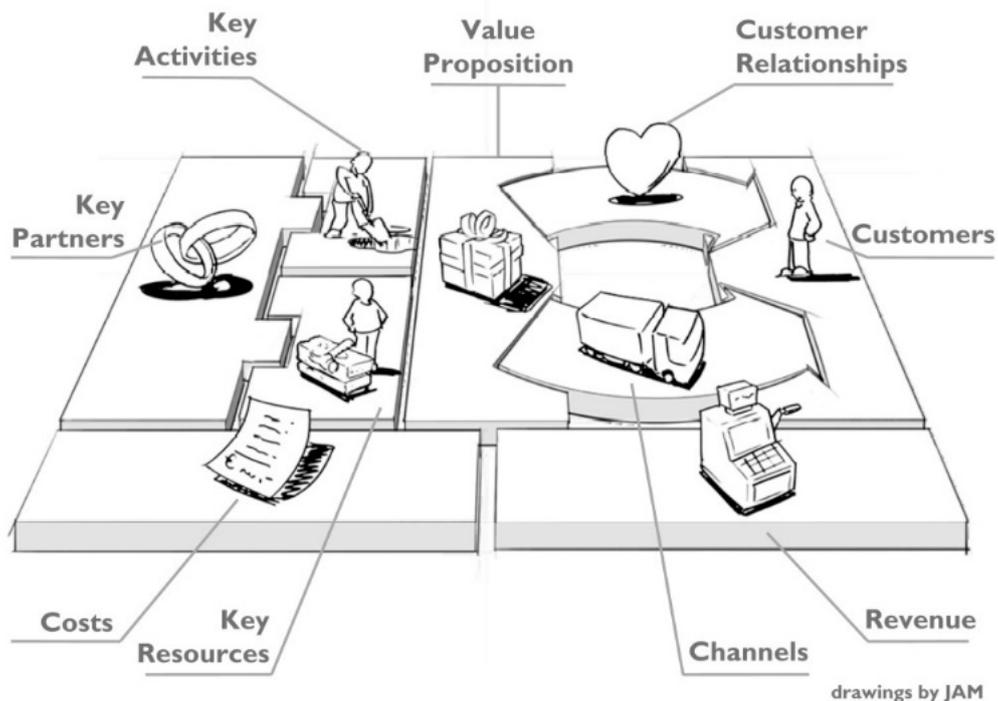


Figure 1 Business Model Canvas (Osterwalder & Pigneur, 2010)

Organisation/Management Innovation

Innovation in the organisation or management arena can be interpreted in two ways, the creation of a workplace that fosters innovation, or the introduction of management techniques to create value. Long lasting advantage can be created when innovation is systemic and challenges management orthodoxy (Hamel 2006).

The creation of a workplace that fosters innovative organisational culture starts with a willingness to be flexible with the business strategy. Innovation has the capacity to disrupt long term business strategies, therefore an organisation should have the capacity to review and adjust a business strategy in response to change (Hamel 2006).

Another component is to build innovation into everyday work. To build an organisation that is not resistant to change; to create an environment where all insights are heard, regardless of seniority; to promote employee engagement with innovation through incentive schemes and staffing strategies.

And finally, to encourage managers to consider creative and innovative approaches to traditional management principles, processes, and practices. To challenge 'the way things have always been done' and think of how they might change what they do (Hamel 2006).

Conclusion

Successful innovation requires a business to have a clear understanding of their core business and competencies, to understand the market, to have a clear definition of what innovation means to them and to create a culture of organisational innovation.

There are a number of tools and resources that will support a business when considering innovation within the company, however the greatest asset is an openness to ideas and an agile business structure that can explore, develop and respond to innovation.

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