



DUNCAN JONES

Hexagon Innovating

*Driving growth by
optimizing innovation efforts*

65 Chudleigh Ave
Toronto, Ontario
M5R 1T4

Text/ Cell: 416 301-6700
duncanjones@hexagon-innovating.com

www.duncanjones.ca
www.hexagon-innovating.com

The entrepreneur always searches for change, responds to it, and exploits it as an opportunity.
Peter Drucker, Management guru (1909-2005)

Discovery consists of seeing what everybody has seen, and thinking what nobody has thought.
Albert Szent-Györgyi, 1937 Nobel laureate for his discovery of vitamin C. (1893-1986)

OPPORTUNITY IDENTIFICATION:

The first two steps in the innovation process go hand-in-hand: The initial opportunity **identification** can arise almost spontaneously or serendipitously, or through a more directed analysis of a variety of factors. This will be the focus here. The initial opportunity **assessment**, not unlike a patent, involves a determination of three characteristics: the novelty or uniqueness, the non-obviousness which includes competitive defensibility, and of course the usefulness to potential customers. The stronger these characteristics, the more promising the opportunity. As in brainstorming, separating these identification and assessment steps as much as possible allows for a richer flow of ideas. Having satisfactorily completed these initial two steps, further efforts to clarify and refine the opportunity, including speaking with potential customers and experts, developing strategies, and preparing a detailed business plan, should be undertaken.

We all, on occasion, think of interesting innovations. These seem spontaneous or serendipitous, but further analysis would often reveal that we are behaving as consumers or customers who have a pain that the current products or services don't quite satisfy. These innovative ideas may indeed also arise as an extension of our knowledge of a particular business environment and the trends. We may even be subliminally incorporating, applying or adapting an approach that we recently read or heard about, to our own situation as a customer or business executive. These same processes can be initiated deliberately to uncover further opportunities, in addition to leveraging new technology and existing capabilities.

MARKET/CUSTOMER/OPPORTUNITY PULL

Is there an unfulfilled market/customer need? This opportunity identification tact involves understanding a potential customer's job-to-be-done, alternately known as performing a needs analysis or developing a use case.

The customer need may be an identified pain, in that they recognize a problem to which current offerings are unsatisfactory. Examples often have a structural nature including cost and efficiency

especially as it relates to time, such that a viable solution is associated with improved systems and processes that results in “savings.” The efficiency of the internet, allows Amazon, eBay, Expedia, Uber and Airbnb to deliver products and services faster, easier and cheaper than has been done conventionally and in many cases attracting new customers who previously were not consumers. Non-internet examples include big box stores like Walmart, fast food outlets like McDonald’s, and self-serve offerings of Ikea and bank ATMs.

On the other hand, the customer may be currently satisfied, but can be moved to purchase by new offerings that serve as an effective means of extending their goals, enjoyment, or growth potential (sometimes termed greed as a counterpoint to pain). Often these desires are met by new technologies; products and services could not even be envisioned by the eventual customer. Cars (led by the Model T), air travel, telecommunications, television, laptops, the internet and smartphones are just a few of the products and services that are now ubiquitous as they appealed to important customer desires.

Changes in the marketplace or overall economy can also lead to changes in customer needs. The various factors that should be considered are captured in the acronym PESTLE, which stands for political, economic, social, technological, legal and environmental (demographic and regulatory are often included as well). Safety laws like the requirement to have smoke and carbon monoxide detectors in all homes has spurred sales of and improvements in these products. Higher oil and gasoline prices have driven innovations in hybrid and electric cars like the Prius (1997) and Tesla (2008).

So how best can you identify a customer need?

In the case of an unsatisfied or sub-optimally satisfied need or pain; observation, listening and even your own experience can give you clues. This can be followed-up by direct observation and even participation (i.e. experiencing getting the job done). Finally direct customer or potential customer engagement through discussions, formal interviews, surveys, and focus groups should be considered (while remaining cognizant of each method’s biases). Your goal is to get a rich understanding of the job-to-be-done for each customer segment of interest and uncover why the current offerings may be coming up short.

In searching for new offerings that customers will value, envision a better future: reduced complexity, faster service, just-in-time delivery, automated functions, easier to use, customer assistance, and more choice are just a few possibilities. Developing prototypes, even basic ones including storyboards, non-functional models and screenshots, to show and discuss with potential customers is recommended.

Environmental scanning involves reading news sources, general and trade magazines, government and financial publications, e-zines, and blogs as well as watching television programs and online videos. It also involves attending conference and trade shows as well as speaking with experts, users and colleagues about possible trends.

TECHNOLOGY/CAPABILITY PUSH

How can the firm's (new) technology or capabilities be leveraged? This opportunity identification tact involves analyzing possible applications for the new technology or capability. What couldn't be done before? The discovery of insulin and its ability to manage diabetes is an example. Advances in material science have brought us metal alloys like bronze and steel, transistors from silicon-based semiconductor material, and carbon fibre bicycles. Storing and sharing large amounts of data including videos is a result of data compression algorithms, the internet and the cloud. Determining your location and proximity to stores, friends or your desired destination are all possible as a result of atomic clocks on the 24 global positioning system (GPS) satellites. Next day parcel delivery is possible through a combination of FedEx's parcel tracking system and central logistics hub in Memphis. Almost any book and now many other products are immediately available from Amazon.com, as a result of their warehousing and fulfilment capabilities. These are just a few examples of leveraging technology advances, special capabilities or frequently a combination of the two to develop novel and profitable businesses.

Just as customers value simplicity, speed, ease of use, lower price and choice, new technologies and capabilities can provide these and other customer benefits directly or indirectly through improvements in the product (strength, durability, weight, size, capabilities, features) or service (speed, cost, reliability, efficiency, effectiveness), manufacturing (cost, process steps, waste, rework, tolerances, quality, flexibility), and distribution (marketing, logistics, availability).

So how best can you identify means to leverage technology or capabilities?

In the case of technological breakthroughs, basic research is often being carried out with at least a general purpose in mind such as solving a problem, improving a material's characteristics, improving the efficiency or effectiveness of a process, or extending the range or capability of a tool or device. Having created, discovered or even just identified the general improvement, the next step is to determine where this could be of significant value either to solve a current customer need or provide an as yet unrealized customer benefit. You also don't have to do the research yourself. Instead you could seek out University professors, contact their technology transfer offices or search online for university technology licensing opportunities, search patent databases to reveal potential sources of new technology, or even contact firms active in your area of interest as a start.

In contrast, a development project involves improving or optimizing a technology or basic research finding and at least an initial product or service may have been envisioned, perhaps in response to market/customer pull. However additional efforts should be made to identify additional and perhaps more profitable markets that could and should also be served by the technology. In many cases, mature technologies can be licensed from firms in a restricted manner for applications or geographic areas that they do not intend to pursue. Biopharma companies have been known to out-license the diagnostic and veterinary rights while maintaining their human therapeutic rights.

Leveraging capabilities, especially rare or unique ones, on the other hand involves introspection, to clearly identify them, and then extrospection to identify how they could be used to benefit current or

potential customers. Questions to be considered include: What capabilities do we pitch to our customers and suppliers? What capabilities are incorporated in our marketing material? Volkswagen's quality German engineering comes to mind. In what areas are we better, bigger, faster, or more flexible than the competitors? What have we invested significant time and money in to develop? Perhaps it's robotics, a project management system, a sales team or a team of business development managers tasked with securing valuable partnerships. With these answers in mind, ask yourself: How could these rare capabilities be used to improve the value proposition of products and services that you are not currently offering or attract a new segment of customers? Amazon.com now sells far more than books online, FedEx will warehouse your critical inventory and manage the supply chain. FANUC, a Japanese robotics company, uses robots to build its robots in what is termed lights-out manufacturing as there is no need for staff. Uber has announced plans to deliver groceries in addition to its sharing economy "taxi" service.

CREATIVE THINKING

What opportunities can be developed by altering, combining or synthesizing various other ideas, capabilities and needs? Although this is often the toughest starting point, you don't initially require deep customer insight or experience nor technology or well developed capabilities. All that is required is your brain and perseverance. This works best in newer, high growth areas where there remains many unknowns and few dominant competitors.

Perhaps the most common approach is to apply a proven business model to a new market. These can be easily identified by their unofficial title as the "famous company name" for/of a new niche market or generically "famous company name" X. Examples include DogVacay - the Airbnb for dogs, Wattpad - the YouTube of writing, PrivateFly - the Uber of the skies, Pley - the Netflix of Legos, Baidu - the Google of China, SpaceX - the FedEx of space, and even Amazon - the Walmart of the web. How might you leverage the core business model/ value proposition of a successful company to serve a totally different market?

A second popular approach involves the development of a vision of the future and then figure out a means to achieve it. Wilbur Wright stated, "My brother and I became seriously interested in the problem of human flight in 1899 ... We knew that men had by common consent adopted human flight as the standard of impossibility." In 1980, Microsoft founder Bill Gates envisioned, "a computer on every desk and in every home." Wikipedia's vision remains, "Imagine a world in which every single human being can freely share in the sum of all knowledge."

So how best can you conceive some novel and creative business opportunities?

This relies solely on your creativity which is in turn a function of your knowledge, effort and passion. Creative thinking techniques may help spark some ideas. These include brainstorming, lateral thinking, evoking SCAMPER (substitute, combine, adapt, modify, put to other uses, eliminate or reverse), organizing post-it note ideas on a wall, creating long solution lists or tables, and building visual models like mind maps or Venn diagrams.

It is especially important when identifying potential opportunities in this way, that they are carefully scrutinized for real customer value, competitive efforts and technological feasibility. An idea like taking a space elevator to the moon would be a great tourism offering and there is little competition, however there is presently no technology even close to delivering on it (The current record for climbing a tether is 1200 m or 1/320,000 of the way).

These approaches of Market/Customer pull, Technology/Capability push and Creative thinking are of course not mutually exclusive, indeed they almost always work in concert. You need to come at opportunity identification from all angles and like the brainstorming methodology, follow the divergent identification process with a tough convergent assessment process in order to maximize your probability of innovation success. Successful opportunity identification (and assessment) are a difficult, lengthy and highly iterative undertaking. If it was easy and straightforward, we'd already all be successful entrepreneurs!

It had long since come to my attention that people of accomplishment rarely sat back and let things happen to them. They went out and happened to things.

Leonardo da Vinci, "The" Renaissance man (1452-1519)

Opportunity is missed by most people because it is dressed in overalls and looks like work.

Thomas Edison, prolific inventor and innovator (1847-1931)

A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.

Winston Churchill, statesman and wartime leader (1874-1965)

Failure is simply the opportunity to begin again, this time more intelligently.

Henry Ford, industrialist (1863-1947)

