

The “NABC’s” of Value Propositions

—CURTIS CARLSON 
Worcester Polytechnic Institute
Northeastern University

—LEN POLIZZOTTO
Worcester Polytechnic Institute
Northeastern University

—GLENN R. GAUDETTE
Worcester Polytechnic Institute

Abstract—*Value-creation is the process of developing new innovations. We discuss two of the first value-creation steps: identification of an important unmet opportunity and the development of a compelling value proposition. Important opportunities are potentially large and fast growing. They have a “white space” that allows a competitive advantage because there is currently little competition. The value proposition is the first deliverable of the value-creation process. It is composed of four main ingredients: the customer and market need (N), the approach for the offering and business model (A), the benefits per costs of the offering (B), and the competition (C). After the value proposition is developed, the additional steps required are summarized. Every enterprise function must have a value proposition. When value-propositions are understood and used throughout an enterprise, managers, teams, and organizations become customer focused and more efficient and effective at creating high-value innovations.*

Key words: Action plan, beach head, customer value, golden nugget, innovation, key insights, the “3 C’s”, value, value creation, value propositions, white space

IEEE DOI 10.1109/EMR.2019.2932321

INTRODUCTION

THE value proposition plays the central role in the formation of new innovations. The model described has been used by us and many others to systematically create significant, transformation innovations. It is being used globally by companies, universities, and government agencies. These principles transformed SRI International into a world-leading engine of innovation.

A FOCUS ON VALUE CREATED

Creating value is the responsibility of individuals, organizations, and society. Those who stop creating value are replaced or go away. Companies fail when they stop creating new customer value faster than their competition. For example, once a company is publicly traded it has, on the average, only ten years left before it leaves the market, either from decline, being bought, or going bankrupt. These companies rarely fail for lack of great people, money, or opportunity. They fail because they do not innovate effectively [1].

Whether consciously or not, we think about value every day, whether

buying a product, figuring out where and when to eat, or deciding how to spend our free time.

Value does not have always have to provide a direct monetary return. Value can be created for society, for shareholders, for others, and for one’s self. Remarkably, although value creation is an essential company function, few companies or other enterprises train their staff to be productive value creators. This is one of the reasons for the poor innovative performance we see so often in companies, universities, and government agencies.

What is value creation? Value creation is the process of identifying and delivering to customers solutions to their important needs better than the competition or alternatives. These solutions become innovations when the providers of them have sustainable business models.

When an offering becomes obsolete and the business model fails, it is no longer an innovation because people are no longer buying and using it. For example, there are over 4,000 mousetrap patents, but only about twenty are bought and used. Those other 3,980 patents are not

innovations, they are inventions. No one wants them except their creators.

Customer value is defined as benefits divided by costs. Benefits and costs are perceptual and *only* determined by the customer. Smith and Colgate provide a review of almost a hundred different types of value that can be created [2]. They also provide a framework that identifies categories of value, as perceived by the customer, which helps differentiate products and services.

There are many ideas about what innovation is and what it is not. Here are some observations and conclusions:

- Almost all proposed innovations fail. The number one reason is that they lack an important customer need.
- Value is determined only by the end user. Ultimately, as producer, what you think doesn't matter.
- Innovators are not born with the required skills. Value creation and innovation are disciplines to be learned, taught, and improved.
- Innovations are based on more than technology. Innovations are always a combination of other forms of knowledge, such as design, services, processes, experiences, and business models.

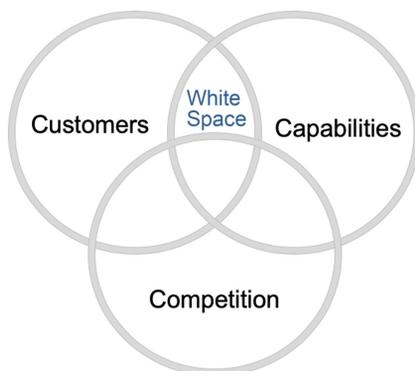


Figure 1. The “white space” is the area where a company’s capabilities overlap with an important customer and market opportunity where the competition is weak.

- Innovations are not created by a lone genius. It takes a team with unique complementary skills.
- The competition is always better than you think. And there are always multiple alternatives to your offering.
- It is often said that innovators should fail fast to succeed early. That is misleading, the goal is to learn fast.
- Inventions are not innovations. Only 3% of patents have commercial value.
- All companies go away. They become less innovative as they grow.
- Few enterprises have a shared language for value creation. Many are like a Tower of Babel with conflicting definitions, which slows down value creation.
- Experienced value creators are not risk takers. They are risk mitigators.
- Innovation is not the result of luck. It takes discipline, commitment, and hard work.

In their book, *Innovation: The Five Disciplines of Innovation for Creating What Customers Want*, Carlson and Wilmot describe core functions embraced by innovative enterprises [3].

Innovative enterprises:

- Address important customer and market needs, not those that are just interesting to staff.
- Employ a disciplined value-creation process to get essential answers fast.
- Empower value-creation champions to drive the value-creation process.
- Form productive teams with shared vision, unique complementary skills, and shared rewards.
- Assure organizational alignment and support for the value-creation process.

These five disciplines transformed SRI International from an

organization that had been failing for twenty years into a model for innovative excellence. The value-creation methodology used made it possible to systematically create world-changing innovations, such as HDTV and Siri.

Next, we discuss two fundamental elements of the value-creation process:

1. Important customer and market opportunities, to create a significant market impact.
2. Value propositions, as the starting point for all value-creation activities.

A common understanding of these concepts across the team and enterprise are necessary for making the value-creation process efficient and effective.

IDENTIFYING IMPORTANT OPPORTUNITIES—THE WHITE SPACE

What are important customer and market needs? Important needs are large and growing market opportunities. They often impact many people. The end user cares—they have an urgent need for a solution.

Every organization will have metrics for what “important” means to them. For example, at SRI International there were growth metrics for the services business (greater than 7% per year) and other metrics for new ventures (greater than \$100M market capitalization).

To be sustaining, companies must constantly pursue both incremental and disruptive innovations. In the global innovation economy, the rule is to disrupt, or be disrupted. Consider what Uber has done to upset the taxi industry.

Figure 1 introduces a three-circle Venn diagram, which we call the “3-Cs.” This diagram helps teams talk

about and identify important customer and market opportunities.

- The first circle represents the **C**ustomer. What are their needs and is there a significant and growing market opportunity?
- The second is the **C**ompetition. It is not enough to think about your direct competition now and in the future, but also the alternatives for addressing the user needs. For example, in making glue, the competition is both other glues and alternative ways to stick things together, such as tape and staples.
- The third circle represents your **C**apabilities. Do you have capabilities that are much better than the competitor; something that provides a strong competitive advantage. We call this a "golden nugget."

We often hear presentations where managers say they have smart people, a tool box of capabilities, and that they work hard. These are not golden nuggets.

A golden nugget can be a strong patent positions, unique access to an essential resource, or proprietary knowledge of a critical manufacturing process. Golden nuggets enable something your customers want and that you own. They give you a two to ten times advantage.

The 3-Cs emphasize that your goal is to satisfy the end user needs where the competition and alternatives cannot. This is your "white space."

The white space is an opportunity zone where your organization has the best end user value and the least competition. The competition will likely catch up over time, but the white space allows you a head start.

Within the white space, it is best if there is a beachhead of early adopters who will buy your product, even when it is not fully developed.

The 3-Cs lead to questions that must be addressed.

How do you determine the end user needs? You should ask the user what they need and watch them doing their tasks, but this is usually not sufficient. When you ask an end user what they need, they can only answer based on what they know.

You also want to ask, "What do you wish you could do, but can't?" That is a different question and it helps open up the discussion. But ultimately it takes new insights to find the best solution. This usually requires looking at the problem from many perspectives and talking to others.

Steve Jobs did not ask people if they wanted a touch screen for the iPhone. All the surveys at the time said users wanted a better keyboard. What they really wanted, and what Steve Jobs realized, is a more convenient user interface.

The Steve Jobs example also illustrates that when you have identified the user's real need, you then must create a solution to address it. That is a critical step in the value-creation process. In the case of the iPhone, Apple developed a low-cost touch screen. For Siri, developed at SRI, the hard part was in identifying a business model.

VALUE PROPOSITIONS

After you have identified a white space, you need to develop your value proposition.

Value propositions provide the framework for answering the most essential questions. Lindic described why value propositions are important and why they must be based on a deep understanding of what customers truly value [4].

Carlson and Wilmot define a value proposition as an **NABC**, where **N**

represents the customer and market need; **A** represents the approach and business model for addressing that need; **B** represents the benefits per costs (i.e., the perceived customer value) from that approach, and **C** stands for the competition and alternatives.

For example, the direct competition for a car is another car of a similar type. But there are various alternatives for transportation, such as motorcycles, bikes, and trains.

In summary, a value proposition is:

- An important customer and market **N**eed addressed by a
- Unique, compelling, and defensible **A**pproach for the offering and business model that
- Provides superior **B**enefits per costs when
- Compared to the **C**ompetition and alternatives.

These points must be addressed for all innovations. They are the starting points to be addressed. A full plan will ultimately contain many other ingredients, but these four components are the beginning. Removing any of them makes the value proposition incomplete and without utility.

Your NABC value proposition must be quantitative and understandable.

Expressions like bigger, better, faster, and cheaper are not helpful. Bigger than what? How much cheaper, and does it matter? As appropriate, graphs, pictures, simulations, mockups, and prototypes are helpful. The key is to capture the most salient information in your value proposition to make clear the new customer value being created. If it matters that your product is smaller than a breadbox, show a picture of it with a breadbox.

Each of these four points are equally important. Unfortunately, most

presentations look and sound like this:

NABC

They are all about the person's approach—only their idea. They assume that the need and the benefits per costs are obvious and that there is effectively no competition. But there is *always* competition.

Someone listening to a talk that is all approach will likely feel lost in a sea of details. We call these "Big-A" presentations.

Big-A presentations are ineffective because three essential concepts for judging the proposal's merits are missing; the customer and market Need, the Benefits per costs, and the Competition and alternatives. More than likely, there is also no mention of the business model.

A presenter may be able to give a two-hour presentation about their approach. But without answering the other questions, it is impossible to judge the significance and validity of the idea. If you can't answer the four points of an NABC value proposition, you still don't understand what you are doing.

Unfortunately, too many presentations are Big-As. If you go into any university or national laboratory, they virtually all *look* and *sound* this way. Companies do a little better, but 90 to 95% of their value propositions are still Big-As.

Here is an exaggerated version of what they look like:

- What the world needs is a better pencil (Need).
- We will provide a pencil that is a new shade of yellow (Approach).
- Customers will then have a better pencil (Benefits per costs).
- Our pencil is the best because it is a unique shade of yellow (Competition).

This example is less of an exaggeration than you might think. The next time you listen to a presentation, notice whether it is a Big-A or a complete, quantitative NABC value proposition.

As one of our colleagues said, "Once you understand what a good value proposition looks like, you will never view the world the same way again."

NABC value propositions apply to every position in the enterprise. They apply to R&D, sales, marketing, information systems, human relations, and everyone else, because they all have customers.

Value propositions are the essential ingredient for having a common, customer-focused work environment. The use of NABC value propositions across a group or enterprise has a transformative effect. It means that every discussion starts with a focus on the customer and how to create value for them.

People have proposed longer alternatives to NABC value propositions, but they are mostly ineffective because they are confusing, and people can't remember them.

Answering these questions might seem simple, but it is not. It is hard, very hard. Because it is so hard to answer these questions, it also makes no sense to add other questions until these are reasonably well answered. NABC are the four irreducible points that must always be answered.

Another important lesson. Don't fall in love with your initial ideas because they won't last.

At the start, your value proposition will be wrong because it is only based on a hunch, guess, or unproven insight. Throwing away a 70-viewgraph

presentation after months of work is hard to do. NABC value propositions are short and they can be iterated quickly without the angst of having to give up your perfect but wrong ideas. They are a fast, efficient, and productive way to start.

BEYOND THE VALUE PROPOSITION

We point out that a meeting without next steps is a social event. Consequently, we add "next steps" to the value proposition. We call these *action pitches*.

Action pitches are designed to make something happen—to create an action. Some call these elevator pitches because they are short and to the point. But the point is to motivate productive behavior, not just be clever. That is why we prefer the term action pitches.

An action pitch is a one- to five-minute NABC value proposition with an opening *hook* and a closing *action*. The hook is to get the audience's attention and the close is what you want to happen next—the action.

- Hook: to grab attention
- NABC value proposition
- Close: the action desired

All three elements, the hook, NABC, and close, are tailored to the specific audience.

A hook for a pharmaceutical executive might be, "Until now over ten billion dollars has been spent attempting to find a cure for Alzheimer's with no significant progress. Thanks to our results, based on a newly discovered protein, that is no longer true."

A closing action for that executive might be, "Can I call your assistant to set up a meeting this Wednesday morning at 9:00AM?"

An important advantage of developing a short presentation, like

an action pitch, is to help you deeply understand your ideas so you can share them with your team, partners, and potential customers. It forces you to focus on the most important points and to express them simply, in an easily understandable way. If you can't do that, you don't understand your proposal well enough and your team is probably confused as well.

Your NABC value proposition and action pitch are the beginning of developing your innovation. Once your value proposition and action pitch are quantitative and compelling, it is time to develop a more complete innovation plan. The plan should include manufacturing, marketing, and distribution. Before product launch, a key element of success is intense iteration with end users and partners.

In addition to the customer value proposition, there must be compelling value propositions for the enterprise, employees, partners, and society. If any of them are not

satisfactorily addressed, the initiative will likely fail.

Perry, Polizzotto, and Schwartz discuss how Draper went from initial value propositions to delivering innovations to end users, adding the additional steps necessary for proper transition [5]. Kressel and Winarsky describe how at SRI International, NABC value propositions were used across the enterprise and in the systematic creation of major innovations, such as HDTV and Siri. Siri was an SRI spinout that, just two weeks after product launch, was bought by Steve Jobs for use on the iPhone [6].

SUMMARY

Value is determined by the end user. The value proposition defines what the end-user needs and the beginning plan to sustainably satisfy those needs better than any of the alternatives. NABC value propositions apply to all enterprise functions. They are a proven

approach for developing and communicating the customer value you wish to deliver.

The ideas presented here are being used by many companies, such as Samsung, Lockheed Martin, and GE. In addition, they are being used by universities and government agencies, including ITRI in Taiwan and Vinnova in Sweden. More information about their utility can be found in a U.S. National Academy report on value-creation best practices recommended for use by the National Science Foundation [7].

It is essential that we all create value, whatever we do. It is a life-long skill. Today too few professionals have these skills. In response, we are teaching value creation to student teams, professors, and researchers at a broad variety of universities, including Worcester Polytechnic Institute, Northeastern University, and Arizona State University.

REFERENCES

- [1] M. Daepf, M. Hamilton, G. West, and L. Bettercourt, "The mortality of companies," *J. Roy. Soc. Interface*, vol. 12, no. 106, pp. 0120–0124, May 6 2015.
- [2] J. Brock Smith, and M. Colgate, "Customer value creation: A practical framework," *J. Marketing Theory Pract.*, vol. 15, no. 1, pp. 7–23, 2007, doi: [10.2753/MTP1069-6679150101](https://doi.org/10.2753/MTP1069-6679150101).
- [3] C. Carlson, and W. Wilmot, *Innovation: The Five Disciplines for Creating What Customers Want*, New York, NY, USA: Random House, 2006.
- [4] J. Lindic, and C. Marques da Silva, "Value proposition as a catalyst for a customer focused innovation," *Manage. Decis.*, vol. 49, no. 10, pp. 1694–1708, 2011.
- [5] H. Perry, L. Polizzotto, and J. Schwartz, *Iterative Innovation: The Creative Path from Invention to Successful Transition*, IEEE 978-4244-3888, 2010.
- [6] H. Kressel, and N. Winarsky, *If You Really Want to Change the World: A Guide to Creating, Building, and Sustaining Breakthrough Ventures*, Harvard Business Review Press, 2015, pp. 180–182.
- [7] *A Vision for the Future of Center-Based Multidisciplinary Engineering Research: Symposium Proceedings*, Washington, DC, USA: The National Academies Press, 2017.

Curtis Carlson received the B.S. degree in physics from Worcester Polytechnic Institute, Worcester, MA, USA, and the M.S. and Ph.D. degrees from Rutgers University, New Brunswick, NJ, USA. He was the President and CEO of SRI International, Menlo Park, CA, USA, from 1998 to 2014. During his tenure SRI became a global model for the creation of high-value innovations, such as HDTV, Intuitive Surgical, and Siri now on the iPhone. His company, Practice of Innovation, works with companies, governments, and universities to improve innovative performance. He was on President Obama's *National Advisory Council on Innovation and Entrepreneurship* and was a member of the *Scientific Advisory Board of Singapore*. He co-authored *Innovation*, a Business Week Top-10 Business Book, with William Wilmot. His teams have won Emmys for HDTV and for satellite broadcast image quality. He won the *Otto Schade Prize for Display Performance and Image Quality* from the *Society for Information Display*. He is a Fellow of the *National Academy of Inventors*. He has honorary degrees from the Malaysian Technical University, Stevens Institute, Kettering University, and WPI.

Len Polizzotto received the B.S. and M.S. degrees in electrical engineering from Worcester Polytechnic Institute (WPI), Worcester, MA, USA, and the Ph.D. degree in visual sciences from Tufts University, Medford, MA, USA. He was previously a Vice President of the Polaroid Corporation, SRI International, and Draper Laboratory. At Draper, he was responsible for programs that leveraged core Draper capabilities for new applications such as in energy and medical ICUs. He established Draper's Bioengineering Center on the University of South Florida campus in Tampa and a multi-chip module facility in St. Petersburg. At SRI, he was responsible for global business development, where he established a proteomic drug development center in Harrisonburg, Virginia, and a center for oceanographic research in St. Petersburg, Florida. At Polaroid, he was responsible for developing new commercial applications. Between corporate positions, he directed the Center for the Globalization of Technology and taught electrical engineering at WPI. He holds 12 patents and is the author of articles on digital imaging and innovation. He is a Fellow of the National Academy of Inventors.

Glenn R. Gaudette received the B.S.M.E. degree from the University of Massachusetts, Dartmouth, MA, USA, in 1989, the M.S. degree from the Georgia Institute of Technology, Atlanta, GA, USA, in 1992, and the Ph.D. degree in biomedical engineering from Stony Brook University, Stony Brook, NY, USA, in 2002. He is currently a Professor of Biomedical Engineering with Worcester Polytechnic Institute, Worcester, MA, USA. He has authored or co-authored more than 75 publications, co-edited a book on cardiovascular regeneration and founded a company based on his research, which develops treatments for Americans suffering from myocardial infarction and other cardiovascular diseases. He has pioneered the use of plants as scaffolds for heart regeneration. It was named one of the top medical breakthroughs of the year by Boston Magazine. He teaches biomedical engineering design and innovation, biomechanics, and physiology, and promotes the development of the entrepreneurial mindset in students through the Kern Family Foundation. He was named the 2015 Faculty Member of the Year by the Kern Entrepreneurial Engineering Network.