ASSESSING YOUR ORGANIZATION'S POTENTIAL FOR VALUE INNOVATION

This content-valid, reliable tool is ready for the development of applications.

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OVERVIEW: Organizations must be innovative all across the value chain, not just in R&D, in order to succeed in today’s rapidly changing economic environment. Over the past two years, an Industrial Research Institute subcommittee has worked to develop a valid and reliable survey tool, using good psychometric (measurement theory) practices. This tool can be used to assess the level of an organization’s Value Innovation potential, what we call the Value IQ. Using this assessment tool can produce useful information for managers who want to strengthen innovation in their organizations.

KEY CONCEPTS: Value innovation, corporate culture, innovation assessment.

We would all agree that innovation is the life-force of an organization. In 1999, a subcommittee of the Industrial Research Institute’s Research-on-Research (ROR) committee proposed that focusing on the development and commercialization of new technologies is not enough for an organization to be truly innovative. The subcommittee claimed that innovation needs to occur across the full value chain, including marketing, market research, sales, advertising, distribution, and service. The ROR subcommittee used the term “Value Innovation” to identify the innovation that occurs when organizational members are working on identifying better (new) ways to serve their current customers, and are identifying new markets.

Committee members were energized by a number of thinkers who have written about innovating outside of R&D (1). These authors declare that value innovation links innovation to what the mass of buyers value, and that companies that are likely to be value innovators redefine problems and frame them in terms of performance criteria that matter to customers. As such, members of Value Innovation organizations will think and act beyond their usual business and delivery processes. If these thinkers are correct, R&D intensity and other easy-to-calculate measures will not capture the potential of Value Innovation going on in a firm.

These ideas prompted the Research-on-Research subcommittee to ask: How might managers know the potential for Value Innovation in their organization? The original committee generated a model, a five-stage action plan, and a set of questions that managers could use as a thought-provoking springboard for discussion (see “Value Innovation: Passport to Wealth Creation,” page 22 this issue). The goal for a subsequent committee
was to develop a rigorous and reliable survey tool for managers to use for organizational assessment and diagnosis.

In this article, we explain how that tool was developed, and identify appropriate opportunities for organizations to use it to assess their Value Innovation potential (Value IQ). The Value Innovation Potential Assessment Tool described in this article can be used for quantitative internal research and assessment within an organization, as it has been developed using sound psychometric (measurement theory) practices.

Innovating in Organizations

Innovation has two parts: the generation of an idea and the conversion of that idea into a useful application. Numerous researchers have investigated what managers can do to facilitate innovation inside organizations, and have found a number of aspects that can contribute significantly to innovation. We know that individuals whose work is meaningful, and who have autonomy to make decisions and speak out about issues, are more innovative. We know that being open to change contributes to innovation. Cultures where it is permissible to take risks and learn from failures contribute to innovation. Business planning, business intelligence and decision-making affect innovation in organizations, while organizational structures that support communication and facilitate learning also contribute to innovation.

The committee set out to develop definitions of “Value Innovation” concepts and statements that would measure those concepts. The measure we developed drew from previous published research, as well as experiences of ROR members. We stress that our resulting assessment tool is not exhaustive—it does not measure everything that can possibly lead to innovation, but rather is a tool that can reliably and validly measure important aspects of an organization’s potential for value innovation. We followed these steps in developing the tool:

- We reviewed previous theoretical and empirical work to identify dimensions and define factors.
- We generated a large number of possible survey items (statements to which people can respond) for the tool.
- We had experts (R&D professionals and academics) review the items for content validity and usability; then we incorporated suggestions and changes.
- We piloted the draft tool with one large industrial organization.
- We did statistical work on the data—we checked for missing data, did factor analysis, and cut down the number of items.
- We checked reliabilities using Chronbach’s alpha. All reliabilities were above .70, which is considered good for exploratory survey work.

- We checked correlations among the factors, showing that they were truly discrete from one another.

Our end product was a Value Innovation Potential Assessment Tool with 33 items, plus some demographic questions. The tool shows content validity and reliability, and measures important factors leading to value innovation. It is a tool that can be used for further work in your organization. (See “Factor Analysis, Validity and Reliability,” next page). The survey tool is displayed on page 40. Here are our explanations of the factors:

- **Meaningful Work.**—This is work that each person knows has impact in the organization and with customers. Research shows that doing work that is meaningful plays a crucial role in individual professional development and innovation. Being engaged in meaningful work is one of the prime social and intrinsic people motivators. Engagement in meaningful work not only spurs individual innovation but some studies have shown that it affects how cooperative and helpful people are toward one another.

- **Risk-taking Culture.**—One way to increase innovation is to lower the risks of experimentation. This factor taps into the organizational culture that sees taking some risk as an opportunity that potentially leads to higher return. One of the ROR members commented that he wasn’t sure he wanted people all along the value chain to be risk-takers; but the research shows that having a culture be open to everyone trying new ideas is a baseline source of value innovation.

- **Customer Orientation.**—This means identifying the needs and wants of both established and potential markets, and delivering value products and services that satisfy these needs. Customer orientation implies not only new products and customer services but also being open to exploring new business models and market creation. Employees along any point of an organization’s value chain can help the organization innovate in ways that grant competitive advantage and deliver value to customers. In a Value Innovation organization, all employees can innovate and create value.
Agile Decision-Making.—Decision-making has several different dimensions, including the depth and breadth of the ideas and analysis used, who is empowered to make decisions, and how rapidly the organization can make decisions. Research on decision-making shows that gathering and using various levels of information, and involving diverse people, leads to better decisions.

Business Intelligence.—This refers to an organization’s capability to detect the market and business trends and understand the strategic issues by scanning the environment and understanding competitors. This factor balances out the organization’s practice of customer orientation. For Value Innovation, people in the organization need to know what is going on with both their customers and their competitors.

Open Communication.—Speaking out, supporting change and feeling that it is acceptable to challenge practices that don’t seem to add value are ways that all employees can add to Value Innovation.

Empowerment.—One aspect of culture is how empowered employees are to independently identify and address problems. Research has shown that an organization in which skilled people have ownership in their area is one in which people will be innovative.

Business Planning.—Processes and techniques are needed to ask and answer “what if” questions when developing plans on how to develop value for business customers. One of the pieces of information you will get from the Value Innovation assessment process is how widespread these practices are, and whether or not a broad spectrum of employees recognize the process of planning as part of their work lives.

Learning Organization.—A learning organization is one in which employees share knowledge, especially about customers. This helps create a deeper understanding and a more thorough approach to Value Innovation. As a result, the organization is able to grow and change in keeping with its environment.

Factor Analysis, Validity and Reliability

The Value IQ assessment tool described in this article is an assessment that meets psychometric (measurement theory) standard practices of content validity, internal validity and reliability. Factor analysis was one of the statistical tools used in the development process.

Factor analysis is a statistical procedure that is useful for reducing a large amount of data. It looks at patterns of relationship among many variables, with the goal of discovering something about the nature of an underlying factor that affects all of them. In developing the Value IQ assessment tool we started with many more items in the survey, gathered a large amount of data (responses to the survey items), and then used factor analysis to reduce the data.

Clearly describing concepts helps us think about complex phenomena. The more abstract the concept, the harder it is to assess it. If we can describe a concept clearly enough—state clearly what it is and is not, and have people agree on what it is and is not, and if we can develop a tool that shows that people tend to think about the concept the same way, then we have an assessment process. However, we recognize that no matter how good our actual assessment is, it will always be to some degree deficient (it will fail to measure important aspects) and contaminated (it will measure things unrelated to the conceptual criterion). Nonetheless, we want to make the assessment as good as possible. Two measurement issues, which apply to the assessment of any concept, are validity and reliability.

Validity refers to the degree to which the items (statements or questions used in a survey) accurately reflect or “tap into” the specific concepts that we are attempting to measure. Validity is concerned with the survey’s success at measuring what it is intended to measure (4).

Validity relates to how well we translated concepts into concrete language that people can understand. This is called content validity. This is important because when we talk about Value Innovation we are using words that represent concepts, and we can assure some sort of validity only by being definitive and clear in the concept description. The Value Innovation Potential Assessment Tool demonstrates content validity: in that the statements to which people respond (what we call the “items”) reflect the specific intended domain of content. As well, many of the items were drawn from previous research in which validation work had been done.

Further, the stringent process of development and the care by which the pilot test with the instrument was conducted give assurances of internal validity. When organizations use the Value IQ survey and run models to see how the data relate to important outcome variables (for example, customer satisfaction), then we will be able to examine the construct convergent validity of the tool. To assess external validity, the Value IQ tool would need to be used appropriately across a number of organizations, and the information used to see how the research findings and conclusions could be compared across organizations.

Reliability is the consistency or stability of the survey. Reliability is necessary but not sufficient for validity; you cannot have validity if your measures are unreliable. One indicator of a survey measure’s reliability is the Cronbach’s alpha. We checked the measures in this survey and all reliabilities were above .70, which is considered acceptable for survey work (4).

When we now use a concept (like “meaningful work”) we know that using the Value IQ Assessment with the items in that factor, and then calculating an average of those items, will yield reliable information about people’s views of that concept.—L.A.-S., N.G., D.R., J.S.
Value Innovation Potential Assessment Tool

Answer each of the following statements according to 1 = Strongly Disagree; 2 = Disagree; 3 = Neither Agree nor Disagree; 4 = Agree; 5 = Strongly Agree.

Survey Items

**Meaningful Work**

1. People know that what they do impacts what happens in the organization
2. The work we do in the organization is meaningful
3. People know what they do impacts customers

**Risk-Taking Culture**

4. Being innovative is characteristic of the organization's culture
5. The organization's culture encourages employees to try new ideas
6. Being willing to take risks is characteristic of the organization
7. The organization is adaptable to new situations
8. Diversity of thought is encouraged in the organization

**Customer Orientation**

9. In the organization, we regularly look at how we offer customers superior value
10. In the organization, we regularly re-examine who are the target customers for what we do
11. In the organization, we regularly look at how we can add more value to our customers
12. We are encouraged to think in terms of total customer solutions
13. We are encouraged to think in terms of what adds value to our customers

**Agile Decision-making**

14. In the organization, we assess business opportunities without being constrained by where we are right now
15. In the organization, decisions are usually made at the level where the best information is available
16. Everyone is involved to some degree in our business planning
17. We respond quickly to changes in the business environment

**Business Intelligence**

18. In the organization, we regularly monitor competitors
19. In the organization, we use competitors as our benchmark
20. We respond quickly to competitors' actions

**Open Communication**

21. Employees feel free to challenge the status quo
22. People feel it's OK to speak out if they disagree with others' decisions
23. The organization culture encourages members being open to change

**Empowerment**

24. People are encouraged to identify concerns about work
25. People are encouraged to address work problems
26. Individual independence is respected by the organization

**Business Planning**

27. In the organization, we use scenario planning as part of our business plan creation
28. In the organization, we use simulations as part of our business plan creation
29. We estimate risks in each step when developing a business plan
30. The organization takes a broad value chain perspective when examining new opportunities

**Learning Organization**

31. When redesigning products (or services) we maximize what employees have learned from their working experiences
32. One of our innovation practices is finding out how our customers really use our products
33. One of our innovation strategy development processes is identifying similar ways our customers use our products

**Demographics**—questions that can be used for sorting, for example:

34. Gender
   - Male
   - Female
35. With which functional area are you most closely aligned?
   - Accounting
   - Corporate
   - Engineering
   - Finance
   - Human Resources
   - Information Technology
   - Marketing
   - Manufacturing/Supply Chain
   - Quality Assurance
   - Research and Development
   - Training
tions can modify them or use others. Before you actually use the tool, consult “How to Use the Value Innovation Potential Assessment Tool,” this page, or a good reference on using surveys (4).

Next Steps

The ROR subcommittee is confident we have a reliable, content-valid measure; however, the tool has not yet been used for predictions in any organization. The next step is larger-scale use. Here are some possible ways to use the tool:

- **Develop predictive models.**—Using the survey for prediction requires your organization to identify important outcome indicators. Examples of such variables could be customer satisfaction, sales growth, market growth, number of new products, and many others (5). After administering the Value Innovation Potential Assessment Tool to a large representative sample across the organization, you would run statistical analyses to correlate the survey factors with the outcome variables of interest.

- **Develop a baseline to check organizational change initiatives.**—The survey could be used to identify internal areas where you might want to initiate changes, and then as a post test some time after the change initiatives have taken place.

- **Benchmarking.**—This means comparing a standardized set of information across organizations. If, for example, a consortium of companies wanted to establish benchmarking using the Value IQ, such a project would include having member organizations use the Value IQ with a large (preferably over 200 people) representative sample of cross-functional employees within the organizations, and have the data collected by a neutral third party. Then, the third party could post anonymous scores sorted by industry, and members could compare themselves against one another.

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**How to Use the Value Innovation Potential Assessment Tool**

Keep in mind three important issues when doing any sort of organizational assessment:

1. **Confidentiality is vital.**—Even though it might seem useful to be able to know exactly who responds, we recommend collecting anonymous data so employees know their inputs cannot be traced.

2. **Share the results.**—Whether or not the results seem favorable or critical about your organization, all information you get will be useful to you. People who take their time to engage in an assessment want to know the outcome.

3. **If issues arise from surveys, have a commitment to respond to them.**—A well-constructed survey, with an appropriate sample response, will provide useful information that should be a basis for action.

Here are general steps for using the Value Innovation Potential Assessment Tool:

1. **Decide precisely what you want to gain from administering the assessment and whom you want to survey. Use a large sample.**

   Different people have different viewpoints. Give thought to your intended respondents, and make sure your survey is targeted specifically to those respondents. Questions to consider: Do you want responses from people in different functional areas? What about different geographical areas? Do you want different hierarchical levels?

   This tool is designed to be used by a cross-sectional large sample (200 respondents or more). Do not have one person (like the CEO) or a small group (like the executive team) respond to the survey and then conclude that it reflects the entire organization—it cannot.

2. **Customize the demographic part, but leave items 1–33 exactly the same as they appear in this article.**

   The demographics part of an assessment will allow you to “cut” the data in different ways. We suggest you limit this to the variables in which you are most interested, perhaps gender, divisional or group areas, or types of jobs.

   Because of the extensive work done to develop survey items 1–33, it is vital you use them exactly as they are reported in this article.

3. **Notify your sample and launch.**

   A good process is to send an introductory email discussing the assessment and saying the recipient has been randomly selected, and asking for their help. Then follow up with an email asking for response, with an embedded link to the web-based survey. Then, after a couple of weeks, follow up with a reminder or thank you. A response rate of greater than 50 percent is good.

4. **Do Analysis.**

   Examine your data for any patterns of missing data. Run some frequencies so you know something about the respondents. Because you started out with three or more statements per concept, you should average those statements together for a measure of each concept. Do not use the numbers from each individual statement and think that you have gathered more information—doing so wreaks reliability!

   Then compare data averages and do correlations or other statistics. We recommend you use analytical programs and procedures with which you are familiar. If more advanced analyses are required, find someone with experience in survey analysis to assist you. Be cautious about building predictive models based on one survey; use different sources of data for more complex analyses. —L.A.-S., N.G., D.R., J.S.
In summary, over the past six years two separate IRI Research-on-Research committees have developed ideas about Value Innovation. This article presents a content-valid and reliable tool based on solid research. The next step is for companies to develop applications of the tool.

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References and Notes
3. Items used in the tool were adapted or developed from extensive literature reviews:

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