

Launching a Value Program in a Global Engineering Company

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Abstract

Engineering consulting has always been a competitive business. Oil and gas companies demanded even more during the deep slide in commodity prices from 2014 to 2016. There was unrelenting pressure to cut fees, else we risked losing out on new projects to other firms. We believed we were doing good work, but we were not very good at proving it to ourselves or, more importantly, to our clients. How could we defend our rates? How could we prove that we were, in fact, delivering good value to our clients? So, our objective was simple: start recording and reporting the value we create for clients. One small challenge, though: we only had a budget of 150 hours and 12 weeks. This paper describes our approach in developing a value program that would work for our company, highlight our learnings thus far, and contemplate where we are along the value methodology maturity level. In the two years since the launch in January 2017, our Value Management program has identified nearly \$840 million in client savings.

About the Author

Derek Da Silva is Principal, Quality and Value Management, at Stantec's Energy & Resources division in their head office in Edmonton, Alberta. He collaborates across Stantec to promote alignment of quality systems and processes, inspire effective organizational change, and champion the continued growth of Stantec's Value Management program. He is a Professional Engineer, Project Management Professional, Certified Change Manager, Certified Principal Auditor, and is working towards his Value Methodology Associate designation.

The Opportunity

Starting in late 2014, oil prices began a precipitous drop, reaching as low as US\$30/bbl in January 2016. Upstream, midstream, and downstream companies—our clients—likewise curtailed their capital spending plans. This meant engineering service companies like ours had to endure grueling competition for even fewer new projects. To add to this pressure, our clients demanded (and received) cuts to hourly rates and fees for project services. But the rate cuts weren't isolated to the oil & gas sector alone; government agencies for municipal infrastructure, community development, and transportation cited the drop in business and income tax revenue as their lever to squeeze their rates lower as well. Put it all together and our company was facing three stark challenges: fewer projects, lower rates, and tougher competition. We strongly believed we always delivered good value to our clients, but we also knew that simple confidence alone was no longer good enough. All-too-familiar platitudes of 'we deliver value in engineering services by working collaboratively with our clients' were no longer going to cut it. We needed to show real dollar savings and objective financial benefits if we wanted to win more projects while simultaneously defending the legitimacy of our rates.

We started by defining the problem. And in defining the problem we discovered the Kano Model to be a useful tool in clarifying our goal.

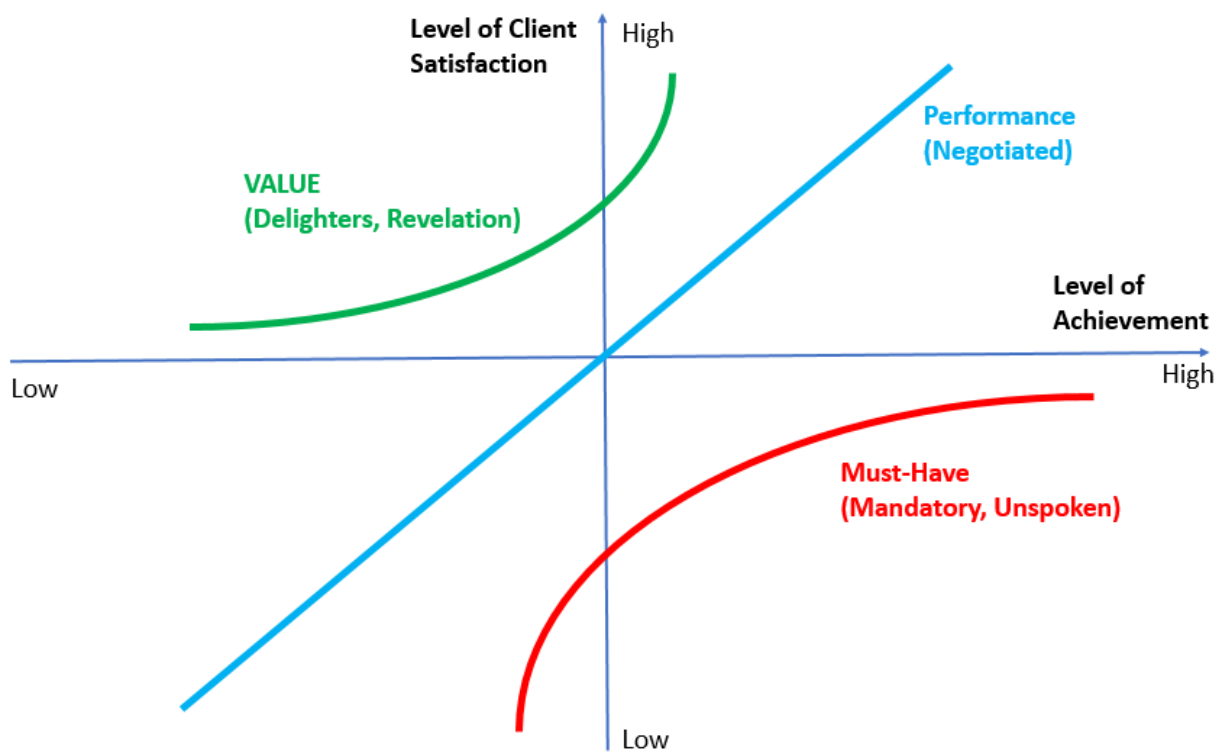


Figure 1: Kano Model

We instinctively knew that the market and our clients were driving our services towards commoditization. Commoditization is a trap where clients do not distinguish your services nor your company as being any different from your competitors. It's an insidious attack on your value proposition in marketing speak. It's usually quite glacial in its approach—so much so that you don't realize it's happening. But in early 2015 there was no doubt what was happening to our rates. In the Kano model, rates are normally negotiated and so fall into the 'Performance' category. But the market was so competitive that we felt as if 'low fees' were now bending down towards the 'Mandatory' category. In other words, it was quickly becoming something that our clients simply expected—no negotiation. Prior to the crash in oil prices, the market demanded that we (1) had the right expertise and resources, and (2) we could deliver the projects on time. Getting new assets up and running quickly to take advantage of high commodity prices was the name of the game. But when oil prices are very low, speed to market is not necessarily a top criterion in selecting an engineering firm. Clients were insisting that we had low rates if we even wanted to be considered for a new project. And who wants to win a race to the bottom when it comes to fees?

To defend our rates and counter the commoditization trap, we committed ourselves to showing our clients in a concrete way the value we were bringing day-in and day-out. We knew we were doing great things in the 'Value' category of the Kano Model, but we were not very good at capturing this data, much less turning it into insightful information. We weren't very good at telling our clients about the real, quantifiable value in hard dollars we brought to their projects. (Engineers are a humble bunch, but in this instance, it can work against them.) Guarding against the persistent market drive to commoditize engineering would require that we firmly position ourselves away from 'design services' and instead towards 'partner/advisor' roles on our clients' projects. This aligned well with a perspective shared by the European Federation of Engineering Consultancy Associations (Croisiau, 2011). As illustrated in **Figure 2: Guarding Against Engineering Commoditization**, we contemplated how this model may have represented the situation in our own company. The question for us then became, what would be the best model for us to reframe our position and, in a sense, to refocus the attention of our clients on real value. We set out to form a project team to study the issue in greater detail, consult with the right groups in our organization, and make recommendations. A tall order when your budget is only 150 hours!

Factor	Design Services	Project Delivery	Partner/Advisor
Solutions	Repetitive Standard package	Developed Client-adapted	Creative Tailor-made
Client Opinion of Firm	Skilled technicians CAD, models Known as Service (Common standards, no changes)	Conceptual Learn-by-doing Known as firm (branding = firm)	Experts Unique Known as person (branding = individual)
Needs, Solutions	Needs – well-known Solution – well-known	Needs – done it before Solution – done it before	Needs – unknown Solution – unknown
Market	High competition Low price High volume What clients want	Competition of skills/exp Mid-level price High performance focused What we have	Low competition High price Clients willing to pay What we want
Risk	Medium risk	High risk	Low risk

Figure 2: Guarding Against Engineering Commoditization

The Discovery—Enter the Value Methodology

In spring 2016, we began pulling together a multi-office team for our ‘Value Engineering’ initiative. During early discussions we learned that one of the representatives was familiar with a particular value platform called ‘Value Methodology.’ The methodology covered terminology, application, processes, and a phased procedure. It even recognized the importance of qualifications from a community of professionals in the field of value engineering, named SAVE International. Finally, the methodology had endorsement as an ASTM standard practice, E1699. As a professional engineer who now practiced Quality Management, finding the ASTM Value Methodology hit all the right marks for me.

Conversely, though, I was also somewhat troubled that I hadn’t heard of the Value Methodology before embarking on our company initiative. I had been with organizations in the past that had various incarnations of efficiency programs or cost optimization systems. But not once had any of these programs or systems been related to a recognized standard of any kind. After some more research into our organization (which was now over 22,000 people), we learned there were actually several people who had experience with the Value Methodology and had even had some training. This affirmed our belief that incorporating the Value Methodology into our initiative would be the way forward. Furthermore, we should work to increase the profile and understanding of the methodology among our staff. It would be good for them, good for our projects, good for our company, and, ultimately, good for our clients.

The Plan

There were four key members of the initiative team. Our first step was to develop a project plan. The plan had to demonstrate a clear path to reaching our objectives, while respecting our constraints on budget (non-billable hours) and schedule. The following is a brief of the plan we implemented to develop and launch our Value Management Program.

Objectives

1. Develop a Value Engineering procedure to identify, document, validate and report value added during project execution.
2. Promote the knowledge and utilization of Value Engineering in the company.

Scope

Phase 1: Establish common terminology; develop methods to calculate, validate, and approve value added items; prepare instructions on recording, processing, and researching value-added items in one of the company’s existing enterprise systems or tools; and, propose methods for sharing value engineering knowledge across project teams. Critical feature: the Value Engineering process must complement existing project management processes and utilize standard change management procedure for approved ideas.

Outcomes of Phase 1 are reviewed with the Oil & Gas Continual Improvement Committee before proceeding to Phase 2.

Phase 2: Define Key Performance Indicators (KPIs) for Value Engineering and propose approaches for monitoring and reporting; develop process by which clients may validate proposed value-added items; and, propose an incentive program to recognize individuals or teams that contribute to client success through the Value Management Program.

Development, Review, Checking and Approval

The development team consisted of representatives across our different Oil & Gas offices in North America. A member of the Quality Management team served as project lead and facilitator. Nominal IT Services is also be needed for any required modifications to an enterprise system or tool.

In addition to the core development team, stakeholders from different disciplines and functional service teams were also invited to review project objectives, comment on deliverables, and validate outcomes. Groups included Project Management, Engineering, Construction Management, Supply Chain Management, Project Controls, Business Development, and Business Leadership (VP and Sr. VP).

Budget

The proposed budget for development of the Value Management Program is shown in **Figure 3**. Note that this budget is exclusive of time required by IT Services, and exclusive of time by personnel at any training events. Training time is covered separately from operational budgets for each office.

Activity	Hours
Project meetings	8
Scope Items:	
a) Definition of value added and value engineering	4
b) Methods to calculate/validate/approve value added	8
c) Examination and instructions on how to record/process/research/track value added items in a selected enterprise system or tool. (Includes only a nominal amount for system / tool modification, if necessary.)	12
d) Methods to share value engineering knowledge across project teams	8
e) Develop and conduct VE work practice training to selected SMEs	16
f) Define VE KPIs and approaches for monitoring and reporting	8
g) Define process for client validation and reporting of value added	4
h) Propose recognition methodology as part of VE process	4
Author work practice document (procedure), including formatting and posting	18
Author work practice document (form), including formatting and posting	12
Project stakeholder review	12
Implement reviewer recommendations	8
Contingency (10%)	14
Total Hours	150

Figure 3: Development Budget

Schedule

The key activities and deliverable milestones are scheduled over a 12-week period. The timeline considered the request by Senior Leadership as well as Marketing & Business Development for a solution ready for implementation by year-end.

Risks

Projects risks were identified early by the development team, and corresponding mitigation measures were documented (fortunately, none of the potential risks actually materialized).

Reporting

Status updates and project requirements were regularly reported to the sponsors of the initiative.

The Launch

Initial outcome from the development phase of our project were a Value Engineering Guideline, a Value Engineering Calculation Form, a Value Engineering Workshop Register Tool, and Modifications to our electronic Quality Management System (eQMS) database.

Development of great work practices, tools, and a database system would be all for naught unless you can successfully implement the change. Using principles from Prosci™ organizational change management, we organized the launch of our Value Management Program in such a way that we could build corporate momentum by inspiring change at the individual level. This would require steps to build Awareness, Desire, Knowledge, Ability, and Reinforcement (otherwise known as the ADKAR™ model).

Awareness

Some of the steps to build awareness in our Value Management Program included:

- We engaged key sponsors, leaders, stakeholders, and technical personnel in the company as we developed the program to inspire them as change agents for roll-out and adoption;
- We made live and web-based presentations to different business centers and project teams;
- We produced a series of internal blogs on client satisfaction and value engineering as inspired by the Kano Model; and
- Started a value engineering forum in our company Yammer platform, where all great ideas and program news are shared.

Desire

Desire to participate in a change is an individual, personal decision. Many psychological and organizational behavior dynamics could be at play. Studies from Prosci™ have shown that desire is best motivated when business reasons for the change are communicated directly from company leaders.

Some of the key steps we took included the following:

- Regular email bulletins from executive and senior leaders made mention of the Value Management Program both during development and during roll-out;
- Presentations, blogs, and email messages on how Value Engineering could improve client satisfaction and improve our proposal success rate; and
- Discussion of the Value Management Program at the annual 'Town Hall' meetings which rotated through different Business Centres and office locations.

Knowledge

The knowledge step of change management is to provide tools and resources to enable people to begin implementing the changes in their day-to-day job roles. Our development team recognized that the full Value Methodology – with its 3 workshop segments, 6 phases, and 43 steps – may have been somewhat overwhelming to introduce all at once. We knew that our Value Management Program would need time to mature and improve over several years. So, we attempted to make the program more 'consumable' within the context of our project delivery processes in our particular business.

Our first step was to convey to our staff that we were already conducting a measure of value engineering for our clients, and we needed to simply improve our ability to record and report that information. (Even before taking VMF 1 training, I knew that our traditional interpretation of 'value engineering' would need to improve across our company.) In effect, we were casually doing value engineering every day. We also knew that our teams were familiar with 'design optimization' or 'cost review' workshops that we often undertook in response to client requests to reduce project capital costs. We defined three maturity levels

of Value Engineering: Casual, Improvised, and Facilitated, as shown in **Figure 4**.

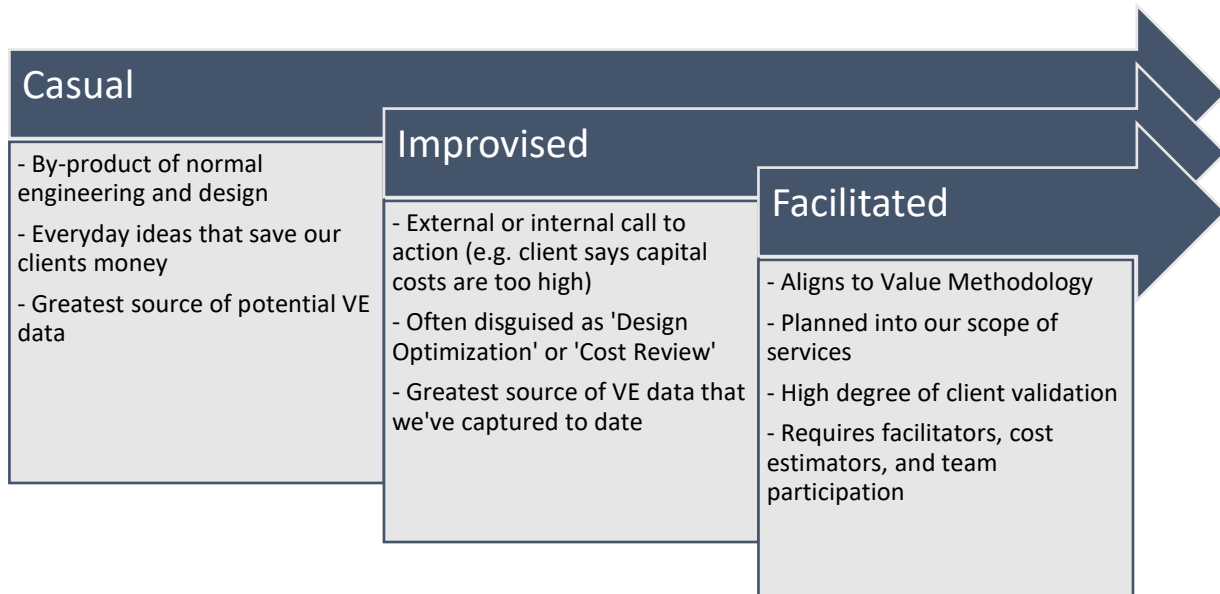


Figure 4: Value Engineering Maturity Levels

We wanted our teams to understand that we already had experience with the Casual and Improvised approaches to Value Engineering, so the increase in required knowledge (for those levels) would not be daunting. The next steps along our journey were then to (a) improve our record keeping and (b) begin adopting the more recognized Value Methodology for Facilitated and authentic Value Engineering studies. We knew implementing the rigor of the Value Methodology would take investment and time. Again, we wanted to make the process adaptable to our project delivery and organizational culture, so we developed our Value Engineering Guideline and Workshop Register Tool with particular focus on the 'Workshop Effort' stage of the Value Methodology. Furthermore, we placed emphasis on the workshop phases of Functional Analysis, Creative, Evaluation, and Development (see **Figure 5**). This approach (to start) works for our business because we were able to integrate it with our established project delivery processes without disrupting the normal approval sequence for changes in project scope. As we develop our in-house abilities in the Value Methodology and have more trained facilitators, our aim over time is to expand the breadth of our formal Value Engineering workshops to include more of the stages, phases, and steps.

Workshop Effort Segment

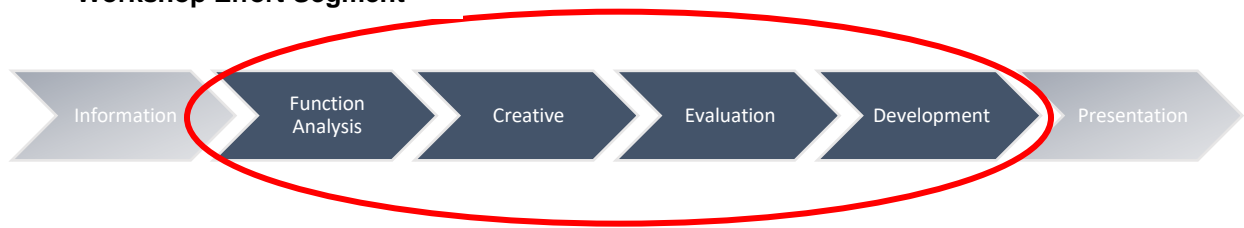


Figure 5: Initial Focus of our Facilitated Value Engineering Workshops

Other measures we took to impart knowledge to our staff included:

- A recorded webinar on how to enter Value Engineering ideas into the database and how to generate reports;
- Introduction to the program, work practices, and reports was integrated into the curriculum of our internal Marketing & Business Development training program; and,
- Making the Value Engineering Guideline, Calculation Form, Workshop Register Form, and the database accessible through our established enterprise information systems

Ability

After building awareness, desire, and knowledge, it's important to monitor how well people are able to adopt the changes with application of the various training, tools, and other resources provided. What we learned was that early adopters – most notably project managers and project engineers – were not the same staff who were most familiar with the database system used to record value engineering data. We responded by enabling people to instead route value engineering submittals to the resident Quality Representatives in each office, who were more familiar with navigating the database. We also created a simplified SharePoint entry form on our internal Oil & Gas website, where ideas could be sent automatically to the Value Engineering Manager. Lastly, we recognized that many teams were still generating the majority of their ideas at the Improvised level through various design optimization studies and cost review workshops (and often with client involvement). To streamline the capture of this data we developed an API to facilitate the bulk-upload of dozens and dozens of records at once into our database system.

Reinforcement

Reinforcing positive behavior and outcomes of the program is critical to ensuring the long-term adoption (and growth) of Value Management in our company. Though our program is still in its infancy, we have already begun reinforcement steps and actions, such as:

- Sharing a wide variety of submitted value engineering ideas on our internal Yammer forum;
- Generating monthly Value Engineering reports for our senior leaders in various offices, showing key performance indicators and other business data, to continue driving participation and to better inform Marketing & Business Development as they respond to new project proposals;
- Authoring an article for our internal company magazine (circulated to over 22,000 people!) on the early successes of the program; and,

- Initializing a Value Engineering Recognition program where the most notable ideas from each Business Centre are formally acknowledged by our senior leaders on a regular basis.

The Results

In just under 2 years since the launch of our Value Management program, we've recorded nearly 200 ideas with a cumulative client value of almost \$840 million. On the implemented ideas, we've demonstrated a Return on Investment (ROI) to our clients, on average, of over 900% relative to the cost of our fees. This accounts for savings in initial capital construction costs as well as reduced operational costs. I think our clients would agree that free engineering is a good deal.

The Future

Yes, \$840 million and an average ROI greater than 900% are the type of early results that we should be celebrating (and we are). At the same time, we know there is great opportunity still before us. In the initial two-year period, we executed over 1800 projects in our Oil & Gas business line, yet only 19 of those projects submitted Value Engineering ideas; that's only 1%. We are excited to see how much value we can demonstrate to our clients by getting even more projects to participate in the program. Our near-term goals are to increase project participation to 3%, to keep our client's Rate of Return over 100%, and to broaden the Value Management Program to more Business Lines and Operating Units in our company.

We also want to grow our maturity level in the Value Methodology. By adopting more rigor and following the Value Methodology, we expect to release much more latent value for our client's competitive advantage.

References

Croisiau, A. (2011, August). *Taking Hold of our Future - A Roadmap for Change*. Retrieved from European Federation of Engineering Consultancy Associations: <http://www.efcanet.org/Publications/Publications.aspx>