WHITE PAPER

PLANNING OPTIMIZATION THROUGH DIGITAL ENGAGEMENT

INTEGRATING COLLABORATIVE KNOWLEDGE FOR BUSINESS OPTIMIZATION

Office of Small and Medium Enterprises (Pacific Region), Public Services & Procurement

GOVERNMENT OF CANADA

CONTEXT AND REQUIREMENT

One of OSME's core activities is promoting services to help small and medium-sized enterprises do business with the Government of Canada. As part of their outreach to the business community, OSME Pacific attended over 30 different events in 2015, leading to contact with over 4,200 people in the BC and Yukon business community.

OSME had a developed a hypothesis that optimizing their event outreach effort would still meet existing outreach scope objectives, while increasing overall outreach quality and reducing overall costs. This would enable effort to be invested in new outreach activities. They had many information assets, a network of over 150 trusted partners and a good general sense of what could be achieved.

The OSME team needed to develop a new business community outreach strategy that would meet the needs of a broad range of businesses representing different sectors, regions and priorities. This continued to be a significant logistical challenge because there were more than 80 potential events, of different focus, timing, impact and cost. Tradeoffs had to be made - balancing budgetary constraints, HR resources and logistics with new, complementary ways of delivering value to the business community.

Ethelo was asked to help optimize future event selection by combining the needs of business stakeholders with management insight and historical event data. The Ethelo team worked with OSME management from May to August 2016 to define a framework for success, launch the digital collaboration and deliver an optimized plan of events to attend.

DISCOVERY KNOWLEDGE ASSETS

There were two major obstacles. Firstly, the information about historical events was spread across many sources, was incomplete and lacked some objective measures. Secondly, the optimization problem space was potentially massive with 80 different events to consider (2^80 combinations of events).

Ethelo collaborated with OSME to define the most effective evaluation criteria to be able to generate viable scenarios. Aside from critical demographics, data needed included cost, date, attendance and event quality. In parallel, there was a need to identify the most efficient way for Ethelo to help construct the plan, to embrace the complexity rather than reduce it unnecessarily.

Stakeholder assets

In order to ensure an optimized plan was based on the best possible information, it was vital to integrate the collaborative input of stakeholders. OSME worked with Ethelo to identify appropriate communication to encourage the participation of 150 trusted partner organizations. The aim was to find a schedule that combined the most valuable events, contributing strategically to objectives in 2016-17 business plans.

PROBLEM STRUCTURING AND PREPARATION

Once OSME had provided Ethelo with a complete list of 80 events discussions led to constraint information that would help identify scenarios that would be actionable from a business perspective. These constraints included:

- Maximum cost for the whole event schedule
- Minimum average per-attendee cost limit
- Requirement that all 10 regions were served
- Requirement that all 8 domains of interest, such as Innovation and Aboriginal Businesses, would be covered
- Minimum event quality threshold
- Preventing unreasonable demands on OSME staff during busy months

The combined effect was to maximize quality and coverage, whilst minimizing costs and resourcing problems. This had a dual purpose: taxpayer value and set-aside resources for new value-adding activities.

Once the event data, descriptions and constraints were loaded into the platform, Ethelo would go on to calculate all potential event schedules, based on all combinations of events that met the management-defined constraints.

Solving a large-combination problem is possible through smart problem reduction, overall computer processing capacity and the distribution of processing. This complex data management operated in the background and had to be invisible to the participant experience.

ONLINE COLLABORATION

The platform asked that each participant evaluate events they knew of by considering the proposal

“Would you see benefit in partnering with OSME at this type of event?”

Ethelo categorized, sorted and presented the events in random order, as a way to minimize bias, but also to guarantee a more uniform rating experience. It was found that participants rated many events beyond their own domain or region which would add further validity to the intended outcomes.

Participants navigated between event ratings in each region, record their regional weighting preferences and view the interim results.

They would subsequently record their ratings on Ethelo’s 9-point rating scale, record their corresponding comments, replies and “likes” for the different events.

PROBLEM-SOLVING AND RESULT GENERATION

Ethelo first reduced the complexity of the problem by setting thresholds of popularity which required some events to be excluded and some events to be included. This still left many events as “maybes”. The Ethelo platform then processed the remaining 12 billion scenarios over several problem solving units at a rate of hundreds of thousands of combinations every second. Ethelo used this analysis to create a short-list of the very best 100,000 solutions. That set the scene for the final stage of creating the collaborative event schedule.

Rather than second-guess OSME’s preferences for fine-tuning the criteria, Ethelo provided a filtered spreadsheet of the top 100,000 scenarios, along with a short tutorial on finding the best schedule. Management were able to use their own filters to generate shortlists, and experiment with different settings and trade-offs. Although many of the 100,000 plans would have been very good, this final filtering step provided the means to identify the very highest quality and delivered value in many different ways. Usually, presentation in spreadsheet form is not necessary, but the size and complexity of this instance made Excel an obvious choice.

OUTCOMES HIGH ECONOMIC VALUE IDENTIFIED

Ethelo’s decision-tool provided a ranked and optimized set of event schedules to meet OSME’s goals. The results described the potential for reducing the number of events attended by at least 15 and up to 30. This translated into lower event, travel and labour costs that pointed to an ROI of at least 85%.

Between 140 and 280 staff hours were shown to be deployable for new value-adding activities. Arriving at the optimal mix using other methods would have proven very difficult, time consuming and less thorough.

Meaningful Engagement

Even though timing dictated this occur during a relatively short window in mid-summer, 38% of the 150 partners invited provided ratings and comments, ensuring a sufficient basis of analysis. The value of the partner input aside, the engagement process also visibly reinforced OSME's continuous dialogue with the business community.

The process of internal discovery was also a catalyst for uncovering new knowledge from partner organizations and for creating a coherent structure around many disparate data sources. This data renewal was anticipated to be highly useful beyond the initial purpose.

Low-risk proof of hypothesis

Ethelo provided tangible proof that optimizing their event plan schedule by reallocating labour and financial resources to a new suite of activities was possible. The decision risk was reduced because the base data was complete and objective, the right stakeholders participated and the algorithmic analysis thorough.

OBSERVATIONS

The combination of focused stakeholder engagement with clear and objective management goals lead to compelling results. Benefits were derived from the process as well as the results. Ethelo was able to refine its discovery and outreach processes as a result of the feedback received from OSME. It also streamlined the processes around working with very large combination problems, and several user interface enhancements were also identified.