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# Crowdsourcing for “Kiosk of the Future” – A Retail Store Case Study

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## ABSTRACT

This article reports on a case study which describes how *Valora Retail*, the company that operates the majority of Kiosks in Switzerland, successfully completed a intermediary mediated Crowdsourcing project as well as the results they achieved using this open innovation approach to generate ideas for the internal project named the “Kiosk of the Future”. Out of the 626 ideas virtually submitted by the crowdsourcing community, 64 ideas were evaluated to be relevant for the project and the 19 best ideas were given rewards and were considered for further internal analysis and development. This case study details the process by which the top ideas were chosen and clearly demonstrates a successful application of Crowdsourcing for idea generation for the early innovation process. It was reported that the achieved outcome of this project would unlikely have originated from the company itself due to high internal barriers.

## Keywords

Crowdsourcing, Small-Space Retail, Retail, Open Innovation, Case Study.

## INTRODUCTION

Traditionally, innovation took place in a protected and closed environment within large research and development (R&D) departments of companies. Today however, the collaboration with external actors such as business partners, customers and lead users is increasingly accepted to play an important role in companies’ innovation capability. Thus, companies are increasingly and actively allowing bi-directional flow of knowledge between the company and the outside of the company. Chesbrough captured and explained this development under the term Open Innovation (OI) (Chesbrough 2003; Enkel, Gassmann 2004). The term Crowdsourcing (CS) was introduced in 2006 (Howe 2006) and can be understood as a subset of OI in which the contribution of external knowledge is facilitated by advanced information and communication technologies (ICTs) such as the internet (Ebner 2009; Fichter 2009). Today, Internet enabled CS is an increasingly used OI approach for idea generation in the early innovation process by many companies from various industries. The popularity of CS is due mainly to two factors: First, the last decade’s rapid advancements in novel ICTs, such as the improvement of online communication tools and development of enhanced features for online interaction, have contributed immensely to the adoption and popularity of CS. Second, given the virtual nature of CS, companies are provided with the unique opportunity to benefit from the distributed knowledge of a considerable pool of individuals with different interests and backgrounds (Howe 2008).

The motivations of companies to run CS projects are manifold. Besides being a trendy alternative approach to feed the innovation process to achieve strategic goals, companies often choose this OI approach to e.g. track trends, meet customer needs, obtain an external perspective or achieve confirmation of their own business intentions. The combination of motivations is often dependent on the company, the department, the internal strategy, the industry and the situation.

This article describes a case study showing the utilization of CS in the early innovation process in the company *Valora Retail* which runs the majority of kiosks in Switzerland under the brand “k Kiosk”. Kiosks are small-space retail shops at busy locations and sell convenience products – mainly press, cigarettes, candy, drinks and lottery – to a mass customer base. The current Swiss kiosk business model is projected to run into difficulties for the following reasons: 1) press products are increasingly affected by the digitization of media, 2) cigarettes are subjected to an increase in legislation and bans, 3) candy and sugary drinks are harder purchases to justify in the larger trend towards a healthier life style and, 4) gambling is increasingly moving online. In order to counter these developments which represent severe threats, several internal discussions and workshops were held in autumn 2008. The conclusion was reached that the search for the future role of Kiosks in an increasingly digital world needed to be identified. Since a big part of the threat to the current business comes from the Internet and Web 2.0 based innovations, it was decided internally to use the internet enabled CS approach to gather ideas about what the “Kiosk of the Future” should look like.

In this paper we will describe how *Valora Retail* successfully completed the CS process – facilitated by an intermediary – and the results they achieved using this OI approach to generate ideas for the “Kiosk of the Future”. The structure of the paper is as follows: section 2 describes related work. Section 3 describes the methodology followed by section 4 which describes the step by step results of the CS process as applied by *Valora Retail*. The discussion will follow in section 5.

## RELATED WORK

CS is often utilized as a complementary approach next to the traditional idea generation approaches such as e.g. Brainstorming (Diehl 1987) and TRIZ (Altshuller 1996); however, by basing their entire business model on this popular phenomenon, a number of creative startups have shown that CS by itself can as well lead to success (e.g. threadless.com, istockphoto.com). Regardless if utilized to feed R&D (e.g. Innocentive, NineSigma), marketing (e.g. Guerra Creativa), design (e.g. Jovoto, Burdastyle), idea generation (e.g. fiat Mio, BMW Customer Innovation Lab) or collective intelligence (Wikipedia, Yahoo answers), CS has contributed to solving many challenging problems and enabled many innovations (Ebner 2009, Piller 2006). The intermediary facilitated CS process which is described in detail in this paper, consists of the following five successive phases (Muhdi et al 2010):

1. Within the deliberation phase the companies decide whether or not the CS approach is suitable for solving an internal problem. Furthermore, the internal buy-in is as well an important issue to be achieved. This phase terminates when a contract is concluded with a chosen CS intermediary.
2. All the necessary activities needed to be accomplished before the problem is represented to the solving community of the CS intermediary are executed in the preparation phase. Tasks in this phase include amongst others the clarification of internal expectations towards the CS project and the outcome, exact formulation and presentation of the problem, planning of necessary resources and the timing of the CS project. This phase has a direct impact on the outcome because once the question/problem is online there are no further possibilities to make any changes to the published content.
3. The execution phase describes the time frame where the problem solving community can submit solutions, namely the idea generation phase.
4. In the assessment phase submitted ideas/solutions are evaluated and the best idea providers rewarded.
5. Once the best idea/ideas are identified according to preset criteria the largest part of the work load in the CS process remains – namely the implementation of best idea/ideas. In the post-processing phase companies develop implementation strategies and prepare incorporation of the ideas generated by CS in the innovation process of the company.

## METHODOLOGY

*Valora Retail* chose a Swiss CS intermediary company with experience in the Swiss retail market, *Atizo*, to perform their CS project (www.atizo.com). The company runs a web-based CS platform with a community of 6’400 members at the time of the case study who contribute (Galli 2010). These members generate 40 ideas per day (*Atizo* 2010) and are situated globally, though most of them are Swiss, followed by people living in Germany, Austria, India and France. The *Valora Retail* idea generation (execution phase) was conducted on this CS intermediary platform and took 7 weeks (from 21.1.2010 to 16.3.2010), generating 626 ideas. The entire process of all five CS steps is described below.

## RESULTS

In this section we will step through the CS process performed by *Valora Retail* and elaborate the activities and results along the process described above.

### Deliberation Phase

The key decision makers for the CS project were the head of process and project management and the head of the “Kiosk of the Future” initiative, both of whom reported to the CEO of *Valora Retail*. They selected two people to form the operational team for the CS project (CS project team): a team member of the *Valora Retail* “Strategic Marketing” department and an outside consultant.

Initially the motivation for *Valora Retail* to start a CS project was three-fold: 1) It is known that there is no “typical” Kiosk customer, as they cut across all demographic categories. A public call for ideas via The CS intermediary company was therefore deemed the best way to achieve a set of ideas with highest diversity. 2) As part of the Kiosk strategy to become more involved in Web 2.0 technologies, initiating a CS project would provide valuable experience in the Web 2.0 domain. 3) The CS participants would provide a first base for a Kiosk internet community interested in and dedicated to the company.

An analysis showed that the third motivation point would require a custom-built platform and offers were solicited for this approach. However, upon inspection *Valora Retail* decided that the costs were prohibitive and that point was dropped. So instead of relying on a single community to generate ideas which would then transition to be a community for marketing activities, two separate communities were used: 1) A Facebook “Fan page” was launched for marketing activities which focused on the *Valora* private label products under the brand “ok.-“ ([www.facebook.com/okPunktStrich](http://www.facebook.com/okPunktStrich)), and 2) *Atizo*, the CS intermediary platform, was chosen because of their existing community of innovators which were a good fit with the type of “Web 2.0 customers” that *Valora Retail* wanted to understand better.

This split reduced any development risks and so the project could easily be budgeted. The combination of a more controlled process thanks to outsourcing the CS and compensating for the lack of community by setting up the Facebook Fan Page, convinced *Valora Retail* senior management to approve the CS project.

### Preparation Phase

The initial step in the preparation phase of the CS process was the definition of the company’s expectations towards the CS project. *Valora Retail*’s expectations were on the one hand to gain first experiences with an idea generation approach based on Web 2.0, and on the other hand to generate surprising ideas which probably would not be proposed by internal committees and from workshops with experts.

The overarching strategic goal of the “Kiosk of the Future” project was to find ways to combine the physical Kiosk retail spaces – which are one of the main assets of *Valora Retail* – with information available online to gain business and strategic advantages in the future. In order to achieve this goal, the CS question was formulated as follows: : “The Kiosk with its many locations will become the hub between the physical and digital world. Which surprising ideas, products and services can you imagine in the context of the Kiosk of the Future?”(In the original German: «Der Kiosk mit seinen vielen Standorten soll Schnittstelle zwischen realer und digitaler Welt sein. Welche überraschenden Ideen, Produkte und Services können Sie sich rund um den Kiosk der Zukunft vorstellen?»).

The CS question was drafted by the CS project team and tested by internal employees. Furthermore, the CS intermediary company also reviewed the CS question to ensure that the intended message was being conveyed preventing community misunderstandings or incorrect interpretations.

In parallel to drafting the CS question, the evaluation criteria that would be used to rank the ideas were defined. These were published on the CS platform alongside the CS question and were visible to the innovator community:

- The degree of interaction between the Kiosk products and Web 2.0
- The level of appeal (attractiveness) for a broad customer base
- The value of information and entertainment

The CS question was published on the CS intermediary company platform as soon as it was technically possible in order to accelerate the CS project time line. The duration of the idea gathering was set to 7 weeks, following the recommendation given by the CS intermediary company.

Subsequent to the publication of the CS question, As soon as the question was online, the CS project team used their networks within *Valora Retail* and an academic institution respectively, to announce the CS activity in an effort to increase participation. Furthermore, personal networks such as Twitter and Facebook accounts were activated as well by posting the link to the CS project.

Finally in the preparation phase, the CS project team planned their resources for the upcoming execution and evaluation phases. Since the CS tasks were to be performed on top of daily business, the CS project team anticipated and accepted an increase in work load.

### Execution Phase

Over the course of the 7 weeks in which the CS project ran, 626 ideas were generated, which significantly exceeded the expectations of *Valora Retail*. The first week saw the largest number of ideas submitted (233 ideas, or 37.2% of the total), but a steady stream continued during the following 6 weeks until conclusion (see Fig. 1).

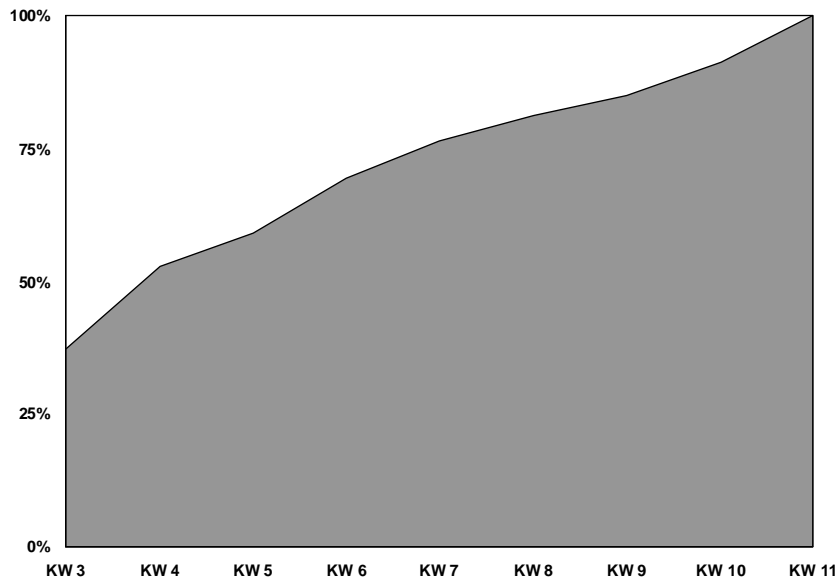


Figure 1: Number of ideas generated by week

As is characteristic for the crowdsourcing process, the ideas arrived in no particular order and in a very wide range of quality, meaning that both the quality and length of the idea text varied, as well as the quality of the idea content. In general it can be stated that the ideas displayed a wide breadth, i.e. a wide range of ideas that had never occurred to the retail professionals at *Valora Retail* or the IT specialists supporting them.

At the start of the project, the CS team had decided to use the ranking system which the CS intermediary company provides as a standard for both innovators and moderators since it provided good support for analysis as well as transparency for innovators. The tool supports a ranking scale from 5 (best) to 1 (worst) and the CS team defined these numbers as follows:

- 5 = very good idea and contains Web 2.0 component (idea is relevant for the “Kiosk of the Future” project)
- 4 = good idea and contains Web 2.0 component (idea is relevant for the “Kiosk of the Future” project)
- 3 = good idea, but does not contain Web 2.0 component (idea is relevant to the Kiosk company but not to the “Kiosk of the Future” project)
- 1 & 2 = “bad idea”, i.e. ideas that did not correspond to the published criteria and were not relevant to *Valora Retail*

The CS team focused on ideas with a ranking of 4 or 5. Ideas with a ranking of 3 were not relevant to the “Kiosk of the Future” project, but they were identified as being potentially valuable for other departments within *Valora Retail* and were forwarded to them. Since the ranking activity was time-consuming and took several clicks per idea, ideas that were assessed to be 1 or 2 were not ranked at all.

The CS intermediary company had designed the ranking system to be used during the idea submission phase as well as at the end of the project. Since the innovators were motivated by the monetary reward, the CS intermediary company recommended providing rankings during the idea generation process which would result in innovators accordingly adjusting the direction and type of their ideas. The CS team took advantage of this and rated the ideas during the idea generating phase. In addition to providing rankings, the CS team commented on some ideas and highlighted which parts of each idea best matched the goals of *Valora Retail*. This was done to steer the ideas in the right direction. The CS team initiated no further interaction with the innovators, except for answering specific incoming questions.

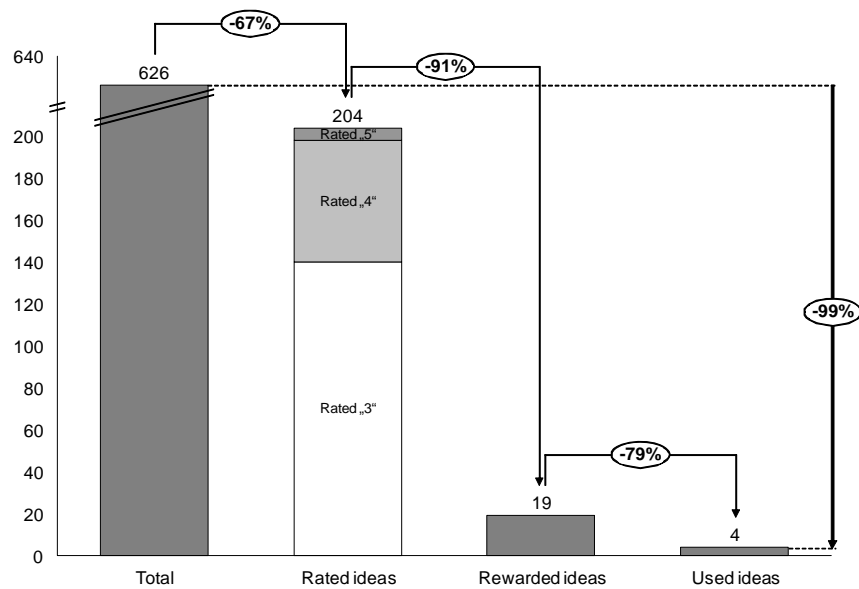
In general, the activity level on the platform was much higher than had been expected by *Valora Retail* and the CS team. One measure of the activity is the number of rankings and comments that took place through the innovators. Ranking by the innovators was very active, as they could earn *Atizo* “seniority” points with this. Thus, 444 of the 626 ideas were ranked (70.9%). The CS team read all the ideas but only ranked the ones with a 3, 4 or 5 or above, resulting in only 208 ranked ideas (33.2%). And an astonishing 480 ideas (76.7%) had comments by other innovators attached.

During the rating of the ideas many repetitions and ideas building on each were discovered. This presented an unexpected and significant amount of work for the CS team. What made their job a bit easier was that innovators were eager for their idea to win and innovators would watch each other carefully for duplicate ideas and when detected would link from the duplicate idea to their own original idea in the comment field. Interestingly, some innovators developed a repartee, as evidenced in some of the back-and-forth commenting that some ideas provoked. In one instance a innovator enhanced an existing idea which was then commented on and enhanced some more by the innovator of the original idea with both of them agreeing (via the comment field), that they would split any money awarded to either idea. Such internal agreements aside, the official *Atizo* policy is to award the chronologically first idea of a group of similar ideas, unless a following idea contributes a significant improvement on the original idea, in which case the monetary award would need to be split.

The number of ideas submitted, the duplications and the need for several clicks per rating meant that the CS team had to invest more time than had been planned for this phase. Consequently, a few actions that might have increased the quality of ideas, such as dialogues with the innovators, could not be performed simply due to a lack of time.

**Assessment Phase**

Upon termination of the virtual idea generation, the CS team carefully analyzed the submitted ideas. Of all the ideas submitted, 60% of the ideas were not considered relevant for *Valora Retail* and therefore not ranked. From the further 204 ideas (33%), 140 ideas (22%) were estimated to be relevant for *Valora Retail*, but not relevant for the project “Kiosk of the Future”. Therefore, only 64 ideas were assessed as being relevant for the “Kiosk of the Future” project and of those, 19 were rewarded and considered for further analysis and processing (Fig. 2).



**Figure 2: Total number of ideas generated and used**

The CS intermediary company gave the moderators two weeks after conclusion of the idea generation phase to sort through the comments and reward the 3000 CHF to the innovators. The CS intermediary company does not prescribe how to distribute the money, but two basic models were considered: dividing the reward evenly, or giving a larger amount to the top ideas. The CS team decided to reward the top two ideas with 400 CHF and equally distribute the remaining reward to gain the innovators’ goodwill towards CS and possibly the Kiosk brand.

Following this step the *Valora Retail* and the CS team were free to use the ideas individually or in any combination, since the innovators seceded their rights to their submitted ideas at the conclusion of the CS process.

**Post-processing Phase**

After the ranking of ideas, the CS team grouped all 626 ideas by category. Interestingly, the vast majority of ideas could be clustered into just seven topic areas, with a few ideas spanning more than one category (number of ideas in parenthesis): 1) Products and services (222), 2) Public displays and terminals (131), 3) Mobile offerings (75), 4) Intersection of physical store with digital information (74), 5) Pickup services (73), 6) Payment (26) and 7) Games (16). A further 69 ideas were uncategorized and irrelevant to the project. The distribution of the ideas was taken to show a trend and an emphasis of topics and was welcomed by *Valora Retail* as confirmation that several ongoing projects were on the right track, e.g. a public display test.

These categories were further prioritized and some removed due to existing projects (payment) or lack of internal support (pickup services). Thus, the CS team entered the second phase of idea evaluation and validation with four categories: 1) Displays, 2) Products and services, 3) Intersection of physical store with digital information and 4) Games, both digital and non-digital.

The CS team prepared the 14 top ideas for a selection workshop conducted with an “idea jury” made up of stakeholders from different departments of *Valora Retail* (Strategic Marketing, Corporate Communications, Kiosk Management, Conception & Construction Management). In preparation, the CS team described each idea in detail and proposed a ranking based on market impact and implementation complexity and gave a recommendation (see Fig. 3). For example, in category 1) Displays, the idea “digital pinboard” (Fig. 3, star “1”), was judged to have a high impact but be easy to implement and was recommended by the CS team for implementation. By contrast, the idea “Tryvertising”, where customers could belong to a club that would be given first access to new products, was rated as moderately complex due to logistical considerations (Fig. 3, star “2”). The idea of sending a short message via Twitter for each sale conducted was a favorite in the CS team, but was rated to have a low impact with high implementation complexity (Fig. 3, star “3”). In the games category, a treasure hunt (Geocaching) would be moderately difficult to implement, yet have a high impact (Fig. 3, star “4”).

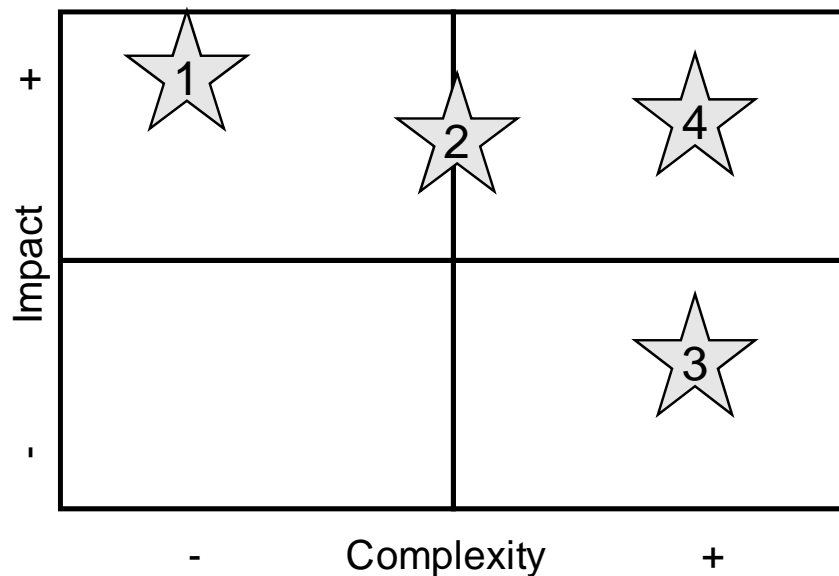


Figure 3: Example of assessment according to complexity and impact of four ideas

These assessments by the CS team were provided to the workshop participants and they were asked to prepare for the workshop by evaluating each idea along a matrix of criteria: customer acceptance, alignment with company vision, alignment with Kiosk strategy, uniqueness and “coolness”, implementation complexity, potential impact in the media, ability to multiply idea, revenue potential. These individual evaluations were discussed and gathered during the workshop and produced 4 clear favorite ideas which were selected for implementation.

The “Kiosk of the Future” project very early on determined that there was a need to examine some ideas in a more controlled lab setting and that some ideas needed to be implemented in an actual Kiosk to be understood. Thus, a small number of the top ideas from the CS process (ranked 4 or 5) were seen as interesting ideas, but impossible to execute due to technological, logistical or business constraints and were put aside to be tested in a lab setting.

The 4 top ideas were combined with other ideas originating from internal *Valora Retail* teams which had been working on the project or generated during internal workshops including external experts. From those three sources, a total of 7 ideas are today in implementation in the “Kiosk of the Future” of which 4 were generated through the CS process.

## DISCUSSION

This case study demonstrated how successful the CS approach can be as part of an Open Innovation process by bringing in ideas that would not have been able to come from within the company due to internal barriers. A few lessons learned along the way are summarized here.

### Expert knowledge in the CS team

Expert knowledge is needed in the team for the deliberation and preparation phases, as well as the assessment and post-processing. In the early phases, a careful preparation helps ensure a successful outcome of the effort. In the assessment of the ideas, a strong domain knowledge and knowledge of the business proved valuable in gaining the most from both the ideas that were central to the project but also in order to know which ideas might be usefully passed on to interested departments. Finally, the post-processing and implementation requires a deep understanding of the business processes involved.

### Question Formulation

The quality of ideas generated in a CS process rests to a large degree on the careful and precise wording of the question posed to the innovators. Drafts of the question were sent out for review and refined iteratively until the majority of reviewers had the same understanding from the written question as the CS team was hoping to transmit.

In formulating the question (and later in assessing the ideas generated) a certain technological bias of the innovator population must be assumed since a fairly high level of computer literacy as well as an affinity for technology is required to be involved in a CS platform at this point in time.

### Budgeting time and effort

Monitoring the ideas during the active idea generation phase and the guiding of the innovators through ongoing ranking and commenting took a much larger amount of time than expected.

It is worth noting that while most innovators aimed to have original ideas so that they would be the chronological first one to post the idea and thus reap the reward, the ideas were still remarkably similar and hard to distinguish from each other if looked at from an implementation or business perspective (i.e. while two ideas might look different in their wording, in a real-world implementation they would just be two features in one program). The similarity of the ideas made for quite repetitive reading for the CS team. However, this did allow a clear categorization of the ideas into only four categories and within those, a clear identification of the favorite topics (public displays and the intersection of the physical store with digital information).

The final number of ideas generated during the CS process described in this case study was higher than expected and consequently required a much larger effort to categorize and rank than had been budgeted. Thus the assessment phase was longer in duration than had been planned. If more time had been available, a productive use would have been to initiate a dialogue with innovators providing the top ideas. More time should have been allocated in the resource planning phase. Best practices indicate that an increase in workload should be planned at the outset of the project and during the first 4 weeks where the bulk of the ideas are generated (Muhdi et al 2010).



## The public nature of CS

A clear difference in focus exists between the phases of idea generation and assessment on the one hand and post-processing on the other. On a CS platform that is open to the public, both idea generation and assessment are therefore visible to the public. As such, the conduct of the company needs to be aligned with corporate policy, as well as communication strategies. The involvement of the communication department is particularly important since the ideas are visible to the press and might be re-printed; which happened during the project described in this paper (Vogel 2010). The process of selecting and rewarding the top ideas needs to be understood by the public. This might lead, for example, to rewarding a great idea, even if it is clear to the CS team that the idea cannot be implemented due to company-internal constraints or strategies.

## Post-processing and implementation

As public as the idea generation and assessment phases are, the opposite is true of the post-processing phase. Here the best ideas from the CS process become just one of the inputs into a larger discussion of what ideas to implement and how. In this stage, ideas might be joined into a larger idea or mixed with concepts developed independently of the CS process. At this point, cross-department workshops are advisable in which people with diverse viewpoints assess the business-aspects of implementing the ideas.

Regardless of the publicly awarded “best” ideas from the CS process, the decision of whether and how they fit into the business is solely in the domain of the company. Thus In the presented case, of the 626 ideas generated, 64 ideas were relevant for the project and while 19 were awarded, in the end 4 were taken into the next steps of implementation. While this number is small, the ideas not used are still useful in providing weight to the ideas chosen, e.g. the large number of ideas in the top two categories (public displays and the customer interest in the intersection between the physical store and digital information), gave weight to the ideas chosen that represented those categories.

## LIMITATIONS AND FUTURE RESEARCH

This case study is focused on a Swiss company operating in a Swiss market. Also, the CS intermediary used is Swiss, increasing the risk of the observations being not general enough. Similarly, only one industry – retail – is examined. However, the experiences described and lessons learned are compatible with those found in international literature. Further research could compare similar cases in other industries and countries.

## CONCLUSIONS

This paper described a CS process in which *Valora Retail* generated 626 ideas over the space of 7 weeks by hiring a CS intermediary. Having access to an existing community of innovators allowed for a quick start of the project, which produced 19 top ideas that were selected and awarded during the assessment phase. These ideas were refined in the post-processing phase. This was a successful CS project for *Valora Retail* resulting in 4 ideas that are ready for implementation in the „Kiosk of the Future“.

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