



Eskom Initiated **Open Innovation** Pilot Case Study



2011 – 2012



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Contents

1. INTRODUCTION	3
2. PROBLEM STATEMENT	4
3. POSSIBLE SOLUTION	5
3.1 Open Innovation Defined	5
3.2 Open Innovation Readiness	6
3.3 Open Innovation Approach	7
3.3.1 Leverage a global OI network – NineSigma	8
3.3.2 Building and stimulating a local eco-system	8
4. IMPLEMENTATION	9
4.1 Project Methodology and Structures	9
4.2 Stakeholders	12
4.3 Open Innovation Proposals/Possible Solutions	14
5. CHALLENGES, LESSONS LEARNT AND SUCCESSES	16
5.1 DEFINE PHASE	16
5.1.1 Challenges/Lessons Learnt	16
5.1.2 Successes	17
5.2 CONNECT PHASE	18
5.2.1 Challenges/Lessons Learnt	18
5.2.2 Successes/Opportunities	19
5.3 EVALUATE PHASE	20
5.3.1 Challenges/Lessons Learnt	20
5.4 ACQUIRE PHASE	21
5.4.1 Challenges/Lessons Learnt	21
6. GENERAL OBSERVATIONS AND LESSONS LEARNT	22
7. CONCLUSIONS	23
8. REFERENCES	23
9. ACKNOWLEDGEMENTS	23

CASE SUMMARY

Eskom Open Innovation Pilot Project

Eskom contributes enormously to the South African economy by supplying electricity to millions of customers, spanning many industries and residential homes. Being open to new concepts which can add value to Eskom's innovation cycle, Eskom embarked on an Open Innovation (OI) pilot project with the aim of strategically bringing innovations from external stakeholders into its innovation cycle. Open innovation is a concept coined by Henry Chesbrough in 2003, when introducing the OI concept where organisations bring innovations and knowledge from outside the organisational boundaries into their innovation cycle to augment their innovation process.

Eskom continuously has to balance serious external demands with internal capacity to innovate, while constantly being challenged by external stakeholders poised to help solve some of these cases.

Two approaches to OI were available to Eskom, namely (i) develop and leverage a local OI eco-system; and (ii) tap into the global NineSigma OI network. The decision was to go with both approaches depending on the challenge. Eskom followed an OI project methodology with the following phases: (i) DEFINE; (ii) CONNECT; (iii) EVALUATE; and (iv) ACQUIRE; and aligned temporary committees to this OI methodology. Three technical problems (or challenges) were distributed through the networks which included energy (local only), safety (local and global) and water (local and global). The overall responses indicated that the maturity level of innovations was mostly non-commercialised solutions (60%). At least 74% of these non-commercialised solutions emanated from the local eco-system (local innovators from South Africa) and most of the solutions from the

local environment were generated by SMMEs (at least 52% of the local solutions).

Each phase in the OI methodology presented its own challenges and successes, which are discussed in this case study. Some of the pressing challenges included the following: the definition of the problem (or challenge) to the external community could have had a more defined scope, containing narrower and more specific parameters and criteria; these challenges should have been defined and evaluated by the same stakeholders; the change management process could have been more in-depth in terms of involvement and communication (related to OI and the internal reach of the external media process); and the governance process constrained the speed of OI connections to the external stakeholders.

Eskom succeeded in developing strong partnerships and media coverage that placed Eskom as a thought leader of OI in South Africa and helped to lay a solid foundation for stimulating future SMME growth in South Africa. Eskom reflected that OI was about connecting solutions and pockets of knowledge, often unrelated, to problems across industries, and not merely about finding a novel innovation somewhere in the world. OI is also about providing opportunities to external stakeholders to become part of the innovation fold of Eskom in a quest to stimulate economic growth at an SMME level in South Africa.

At the time of publishing, the pilot was still on-going, hence the successful proposals have not been finalised and reported in the case study. This case study explains the process followed and highlights the lessons learnt during the process, which Eskom wants to share with other organisations that are keen on pursuing open innovation.

I. INTRODUCTION

Eskom is the largest producer of electricity in South Africa and has an extensive customer network which includes the commercial, agricultural, mining and industrial sectors as well as millions of residential customers. Eskom (2012) is a major contributor to the national economy and is responsible for approximately 95% of South Africa's electricity generation and supply, and approximately 45% of Africa's electricity usage. This means that Eskom is also the largest buyer of coal in South Africa (R25 billion in 2011) since most of its electricity is generated from coal.

The organisation has embarked on an extensive capital expansion programme for the development of additional power stations and major power lines to meet the surging demand. Eskom's mission: "To provide sustainable electricity solutions to grow the economy and improve the quality of life of the people in South Africa and in the region", means that the organisation has to innovate continuously (Eskom, 2011, p 10). For this reason, Eskom constantly invests in innovation

through R&D, focusing on the development of new technologies and has invested R500 million in R&D in 2011 to improve current operations and investigate future energy options (Eskom, 2012b).

Eskom took a strategic step to open up its innovation cycle and pursue Open Innovation (OI), where the organisation engaged with external stakeholders to help address some of Eskom's core and non-core challenges through an OI pilot project. This engagement went beyond contracting or procuring services and/or goods from third-party suppliers, as it entailed sharing Eskom's challenges, needs and future requirements with external parties, by encouraging them to seek solutions to such challenges. The Eskom OI platform, within the OI global and local network, was a strategic step towards positioning Eskom as a dynamic innovation thought leader in the region and in the global economy. The synergies of this OI partnership gave Eskom opportunities and also highlighted the barriers and challenges that Eskom has to deal with in order to take OI to higher levels of engagement and enablement in Eskom.

2. PROBLEM STATEMENT

Eskom has to deal with serious external demands juxtaposed with challenges to meet these demands. Many solution providers approach Eskom to help solve perceived challenges, but because they do not have insight into and information about the real challenges, these solutions are not always helpful to Eskom. In addition, the lack of a structured process to handle these innovation engagements with external stakeholders might harm the image and brand value of Eskom and exemplify lost opportunities for innovations in the energy sector.

Currently, most innovation ideas and approaches entail a technology push, i.e. where ideas about new technologies, solutions, products and services are introduced without a clear market need being visible and/or where there is no existing and willing customer. In such instances, inventors and/or entrepreneurs approach Eskom with the aim of trying to penetrate Eskom's procurement processes or of gaining Eskom's endorsement so that they can get their product on the open market. Previously the Eskom Innovation Circuit was not geared to handle such requests, and as a result there was a negatively impact on public perceptions about Eskom and at the same time new energy innovations were prevented from coming onto the market. It was clear that if a structured eco-system approach was adopted, this approach would facilitate the innovation process for Eskom and reposition Eskom as an open innovation thought leader with a collaborative innovation approach.


From a theoretical perspective and after exposure to other OI case studies which resonated with Eskom, the organisation believed OI might be an opportunity to speed up the innovation cycle and engage with external service providers (local and international) in a more structured way to bring innovations, aligned with

real problems, into the innovation process. These OI pilot projects were therefore a direct response from Eskom to taking the opportunities that OI presented by embracing suitable innovations from sources external to the organisation and in this way, build an external eco-system of innovative local providers with which Eskom could engage. Eskom also realised that embracing OI in South Africa would put it at the forefront as an OI thought leader in the country and that local external challenges would also stimulate growth at the SMME level in the local energy sector. Eskom could therefore provide the market pull that would ensure sustainability, growth and opportunity in the energy market. This could be achieved by setting clear priorities for energy-related innovation and then co-ordinating the various key role-players needed to ensure market-driven energy innovation. Furthermore, as Eskom also wished to experiment with OI, the OI pilot was initiated.

In 2006 Eskom established the Innovation Circuit (IC) to support one of Eskom's core values, namely innovation. The IC encourages and nurtures a culture of innovation inside Eskom and this unit spearheaded the OI pilot with the aim of proving the value of sharing needs with outside parties to accelerate the discovery and implementation of innovative solutions (Eskom, 2011). Through this OI pilot project, Eskom also wanted to ascertain how well Eskom was doing with its own thinking in terms of innovative ideas compared to the innovation space outside Eskom's boundaries, and was open to the discovery of truly innovative ideas. The above culminated in the core question to be addressed through this OI pilot project: *How can Eskom co-innovate with local and international institutions in a systematic, consistent, effective, rigorous, transparent and measurable way?*

3. POSSIBLE SOLUTION

3.1 Open Innovation Defined

pen innovation, a term first coined by Chesbrough (2003a), has become a cutting-edge business practice. Globally, companies across all industries are embracing it in order to maintain their competitive advantage and meet customer needs. Chesbrough (2003b, p XXIV) in his landmark book, *Open Innovation: the New Imperative for Creating and Profiting from Technology* (Chesbrough, 2003b, p XXIV), defines open innovation as follows: “The use of purposive inflows and outflows of knowledge to accelerate

internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.”

Some core principles of OI include: “Not all of the smart people work for us so we must find and tap into the knowledge and expertise of bright individuals outside our company” and “We don’t have to originate the research in order to profit from it” (Chesbrough, 2003b, p38).

3.2 Open Innovation Readiness

An organisation must be highly engaged and enabled to successfully implement OI. Figure 1 illustrates the various quadrants into which organisations may typically fall in terms of OI readiness. An organisation that is fully engaged externally and

is strategically enabled will be in the best position to implement OI successfully. In such situations, an organisation derives benefits from external linkages and has enabled the necessary structures, processes, competences and culture to embrace and leverage OI (Quadrant 4).

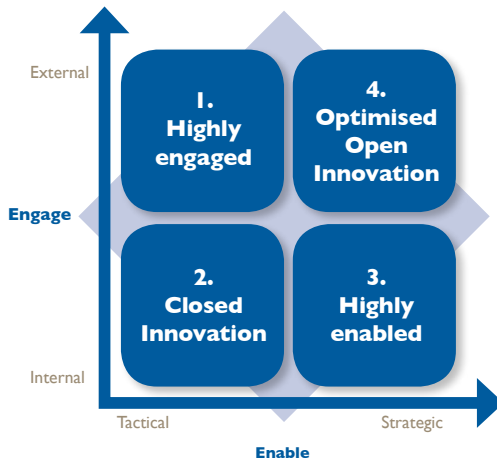


Figure 1: Organisational Readiness (Adapted from NineSigma, 2012. About Open Innovation.)

3.3 Open Innovation Approach



Figure 2. Two approaches to leveraging OI.

In order to establish the notion of a permanent and formal platform for OI, Eskom needed to first verify and test aspects and the implications of OI and highlight challenges and successes, as well as the key lessons to be learnt from the OI process, which could then be integrated into a more long-term sustainable solution. The main objective of a pilot project per se was to ascertain the best OI approach for Eskom to follow going forward (if at all), taking these lessons into consideration, so as to solve challenges and leverage the opportunities that OI presented to Eskom and in addition to stimulate economic growth in South Africa. The OI pilot project encompassed the two approaches to OI depicted in Figure 2 and further listed below:

i. **Leveraging a global OI network.** NineSigma is an OI organisation with a network of solution providers. This is the

largest such network in the world and spans all industries, geographies and technical disciplines. This global network offers access to both patented and pre-patented knowledge and intelligence capabilities. Through this approach, Eskom leveraged the NineSigma global network of solution providers to link feasible solutions to the challenges selected by Eskom (the solution seeker).

ii. **Building and stimulating a local eco-system** which is a network of South African innovators, institutions, organisations, SMEs, research units, etc. that was leveraged to solve Eskom's selected challenges. This eco-system was formalised, structured and scaled up to enable a selection of external innovations that could solve Eskom's selected challenges for the pilot project.

3.3.1 Leverage a global OI network – NineSigma

NineSigma's OI global network was leveraged as one of the OI options listed above, since the organisation is one of the most experienced and advanced OI service providers in the world. Founded in 2000, NineSigma has offered OI solutions long before these solutions were an accepted management practice. NineSigma engages organisations across all industry sectors with the global innovation community and

enables organisations to leverage resources to solve immediate challenges. The organisation has completed over 2 300 OI projects and has more than 2 million solution providers, making it the largest high-tech OI network in the world. NineSigma solves challenges by connecting solution seekers (such as Eskom) to solution providers (innovators from across the world) and also implements business models to stimulate local economic development through OI.

3.3.2 Building and stimulating a local eco-system

Creating a local eco-system around Eskom's value chain is closely aligned with OI practices, which are a set of defined processes and engagement with virtual and physical networks to discover, isolate and implement innovative ideas, technologies, products and capabilities from external organisations to address identified problems or challenges.

Eskom faces challenges requiring innovative solutions. These challenges create opportunities for making deals between Eskom (a solution seeker) and the providers of energy innovations in the economy, so enabling these deals will assist with stimulating growth in South Africa.

With the support of the Research Institute for Innovation and Sustainability (RIIS) as the appointed consultant, the pilot project was designed to develop a database of high-tech solution providers in the energy arena to augment Eskom's innovation capability and at the same time to stimulate economic growth in South Africa.

In addition to a database of solution providers (innovators across South Africa), the local ecosystem also focused on building closely knit partnerships with institutions such as the Technology Innovation Agency (TIA), the CSIR and the technology transfer offices of local universities.

4. IMPLEMENTATION

4.1 Project Methodology and Structures

The scope of the OI pilot project was clearly defined and included the definition of the challenges. (A challenge is a “need” which has been posed to the open innovation community through an OI platform in the form of a written brief. This is a clear, concise and compelling statement of a business need to be solved, i.e. a problem or opportunity). Then the challenges were deployed to the local eco-system, supported by Eskom in defining and verifying the international challenges through the NineSigma network, the building of the local eco-system, the actual local launch of the project and the evaluation of possible solutions to link a short-list of solutions to the defined challenges. Therefore the methodology deployed was challenge-driven rather than idea-

driven, meaning those solutions had to be aligned with the specific challenges that were defined, and were not merely unsolicited solutions.

The overall project methodology is depicted in Figure 3 below. The methodology encapsulates the identification and definition of the challenge (the problem to be solved) as well as the definition of the local eco-system, according to which the eco-system is built (for option ii), the connect phase where the challenges are deployed to the local eco-system or global network (NineSigma), the evaluation stage where the solutions are evaluated against the defined criteria, followed by the acquisition of the solution by Eskom (the contracting process, through licensing, joint ventures, product acquisition, etc.).

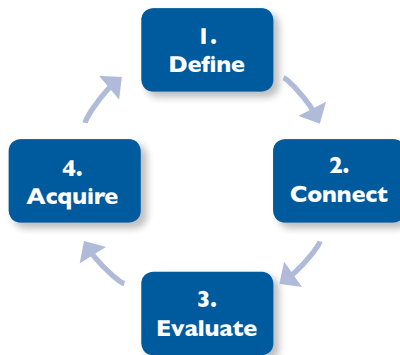


Figure 3: OI Pilot Project Methodology.

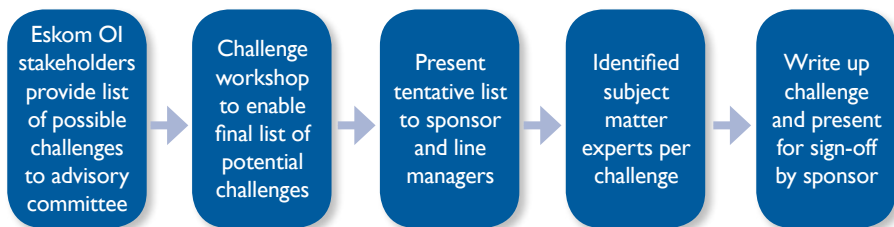


Figure 4: Definition of the Challenge.

As it was critical to ensure that the challenges were defined so as to elicit the right solutions, a rigid process was established that dealt with the definition of the challenges itself. This process is depicted in Figure 4.

Structures and processes were defined to handle the evaluation process as illustrated in Figure 4. The local and international responses were evaluated through the same process. The local responses were submitted to Eskom through an Eskom OI online website whereas

the international responses were submitted directly to NineSigma's website. As indicated in Figure 5, there were two stage gates – technical and commercial evaluation. The technical evaluation committee was comprised of subject-matter experts who reviewed the responses according to the technical specifications and criteria defined during the definition phase. By contrast, the commercial evaluation process was underpinned by Eskom's procurement policies and procedures.

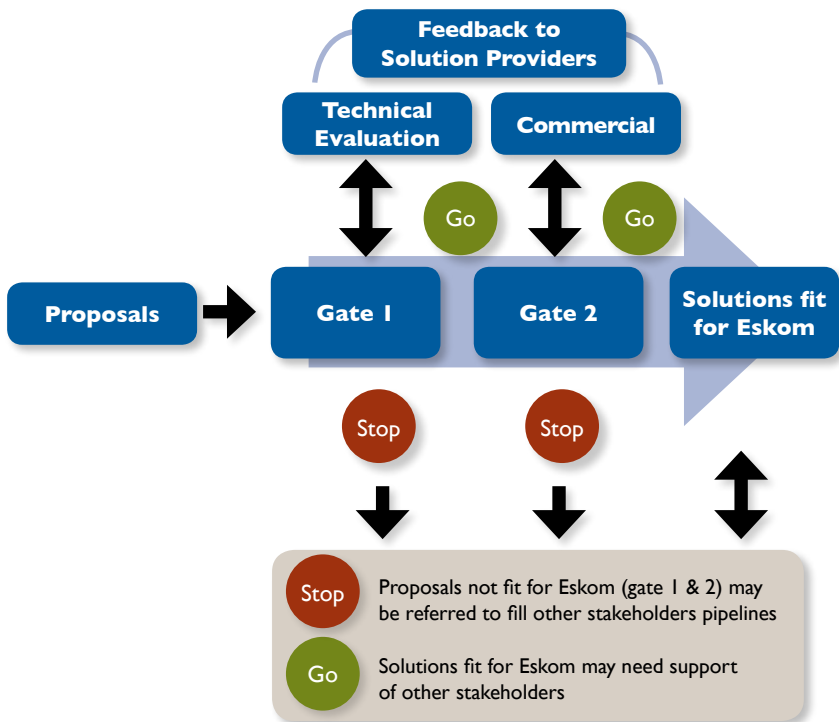


Figure 5: Evaluation Process.

The structures for the pilot project were temporary and the teams consisted of technical and business stakeholders who contributed to the project outside their set job mandates. There is an integrated feedback process to the solution providers and once the solution has successfully moved past Gate 2, the Acquisition stage will be entered where the final solution is selected and a contract is placed with the solution provider. The final solution could either be further collaborative research (depending on the maturity of the solution), a pilot project or a demonstration of

a final product for further uptake by the business, if the business agrees that the final product is fit for purpose.

The following committees were temporarily established to manage the process of the OI pilot project:

- OI Stakeholder Advisory Committee – consisted of a team of subject-matter experts and open innovation champions in order to promote open innovation as well as conduct the Eskom Open Innovation pilot project. The committee was made up of some influencers

as well as decision makers from across the business and its role was to advise the project team on matters related to the challenges for the OI project, on the evaluation of solutions, as well as to connect the OI team with other relevant experts or stakeholders that could add value to the OI process from time to time.

- Technical Evaluation Committees – a technical evaluation committee was established for each of the challenges because each challenge had its own technical domain that differed from the others. Each committee had a dual

function, namely defining the challenges with input from various stakeholders, as well as evaluating potential solutions from external solution providers (local and international).

- Commercial Evaluation Committee – the commercial evaluations have to commence once the technical evaluations have been finalised, i.e. if a possible solution has been found. This committee is responsible for compliance with Eskom’s policies and procedures for procurement (at the time of writing this case study, the commercial process had not yet been triggered).

4.2 Stakeholders

The local eco-system was comprised of external stakeholders which were defined during the DEFINE stage of the methodology, following the challenge definition in the same phase. The eco-system definition and consequent eco-system development were fully aligned with each of the challenges that were distributed through the eco-system to obtain solutions for selected challenges. The main stakeholder groups that formed part of the pilot project are illustrated in Figure 6.

Figure 7 depicts the overall eco-system. The light-blue outer band illustrates the local solution providers and partners inside South Africa whereas the white area outside the circles represents the global space of solution providers, which NineSigma owns as their propriety network. The innermost circle represents Eskom’s own innovators and contributors within its own organisational boundaries. The IC’s mandate is to stimulate an innovation culture inside its own organisational boundaries in this sphere.

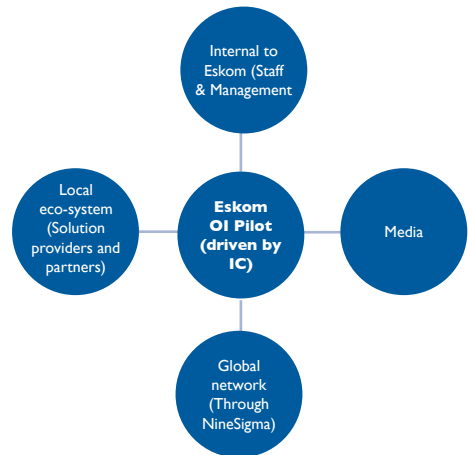


Figure 6: Stakeholder Groups.

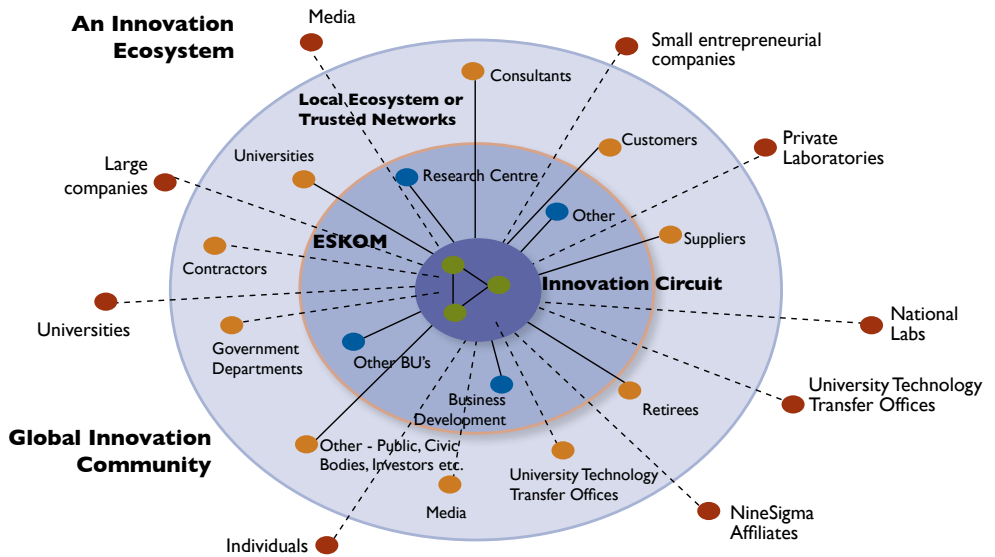


Figure 7: Eskom Innovation Eco-system.

4.3 Open Innovation Proposals/Possible Solutions

One challenge for Energy¹, Safety and Water respectively was disseminated through the local eco-system and global network as depicted in Figure 8 (the number of responses is indicated in parenthesis). Eskom received a total of 173 possible solutions through the OI process of which 85 potential solutions were from the local South African eco-system and 88 from the global network through NineSigma. The maturity level of the responses is listed in Table I,

indicating that the majority of solutions have yet to be commercialised (40% commercialised vs. the remainder that have not yet been commercialised at 60%: 74% local and 26% global not commercialised). At the time of writing this case study, the final technical short-lists indicated five solutions per category per platform (local and global) with a potential for 25 short-listed solutions. The final commercial evaluation process still has to be completed.

¹Local only

I X Energy Challenge*	I X Safety Challenge	I X Water Challenge
<ul style="list-style-type: none"> Local (40) 	<ul style="list-style-type: none"> Local (23) Global (39) 	<ul style="list-style-type: none"> Local (22) Global (49)

Figure 8: Challenge Deployment and Number of Solutions.

*The Energy Challenge was not run through the global (NineSigma) network

Table I: Maturity Level of Responses/Possible Solutions.

Challenge	Theoretical model	Conceptual model	Prototype	Ready to commercialise	Commercialised
Energy local	12	10	8	4	6
Water local	0	1	12	11	9
Water global	0	4	4	4	37
Safety local	1	17	1	1	3
Safety global	2	8	12	3	14
SUM	15	40	26	23	69

Figure 9 illustrates the percentage split of responses from different types of originators for the local South African challenge, indicating that at least 52% came from SMEs, 13% from academia, 10% from individuals/inventors and 9% from multinationals, and the rest were split

across the other categories. The NineSigma split for global responses was categorised differently (not indicating a separate SME split) but showed that at least 35% of the responses came from the industry followed by 28% from academia.

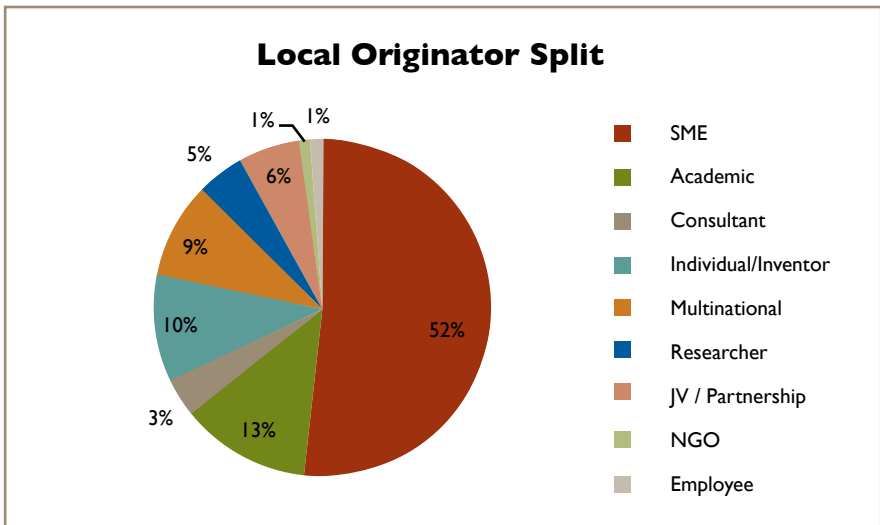


Figure 9: Local Originator Categories

5. CHALLENGES, LESSONS LEARNT AND SUCCESSES

5.1 Define Phase

5.1.1 Challenges/Lessons Learnt

The definition of the challenges is one of the critical steps to ensure that proposals are elicited within the parameters set in the technical challenge. If the parameters or criteria for innovations are too wide, the responses would not be specifically aligned to the challenges to be solved. Hence these challenges should be valid, real and relevant, with a clearly defined scope that resonates with the business as well as with inventors outside the boundaries of the organisation. Therefore the framing of these challenges is critical to eliciting the right solutions to specific problems in the business. The topics chosen by Eskom were relevant and fully aligned to strategic objectives but the scope could have been defined more strictly with more specified parameters for responses, as this would have prevented a number of the misaligned proposals received by the organisation and might also have prevented unsolicited responses.

Even though the change management process facilitated the engagement of the relevant members of management directly affected by the OI pilot project, the process could have entailed more in-depth communication and more engagement with the business itself, as these members would be the recipients of innovations for implementation later in the process. This lack of a more engaged and encompassing change

management process delayed the smooth buy-in by line business later in the project.

Although the technical evaluation team consisted of relevant experts and specialists, the project team felt that external technical specialists would have added value to the definition and evaluation process, and should be considered for inclusion in future OI projects to enable value-added external input at the outset of the OI process. Furthermore, in terms of the composition of teams (in particular the evaluation teams), top level management was not always involved in the process as the function is often delegated lower down in the hierarchy, which creates challenges during the buy-in process later. Top management was involved in the process but could have been involved more during the early stages as well as in the evaluation phase of the project as this would facilitate buy-in of solutions later on.

After the conclusion of the challenge definition, a proper market study, aligned with the identification of potential communication channels, would have added value to the development and construction of the eco-system of external suppliers of innovation. Hence this study would have been beneficial for the development of the engagement strategy, seeing that it could have identified a wider spectrum of potential innovators across South Africa.

5.1.2 Successes

Even when considering the view that composition changes (as discussed above) would have added value to the committees, the OI project team managed to set up these committees and structures successfully with engaged and motivated members. This gave the committee members the opportunity to express their innovative ideas and expertise in other parts of the business.

An internal marketing campaign was also run throughout Eskom to sensitise all stakeholders across the business. An interesting observation was that one Eskom staff member submitted a proposal through the OI challenge on the external platform. This might have been a result of more robust external marketing or because Eskom employees are listed as solution providers on external databases.

5.2 Connect phase

5.2.1 Challenges/Lessons Learnt

Engaging with the media and reaching South African people (not only inventors) is a communication risk in the sense that the general population might perceive that Eskom cannot solve its own problems and is therefore “forced” to look for solutions elsewhere. This risk did materialise during the media briefing, although it did not lead to negative media coverage because the real context of the OI exercise had been properly explained. In general, South Africans seemed to be positive about the open challenges run by Eskom.

Another risk to consider is whether, in asking the masses to assist with solving problems, this could “open a can of worms” if Eskom was not geared to handle large volumes of responses. The OI campaign led to a larger number of unsolicited responses than Eskom anticipated and the organisation had to deal with these responses individually, which resulted in unforeseen increases in work load increases and challenges, which Eskom had to deal with in a sensitive manner.

A media briefing should be prepared in greater detail in future, to ensure that all possible internal stakeholders are in attendance – especially technical experts – as it could be anticipated that the media would pose technical questions which might not fall directly within the scope of the OI launch but should still be handled expertly. The presence of technical experts would also build the

credibility of the process and show that Eskom does have the internal capacity to work in the OI arena.

Internal executives and management should be briefed on the media content and specific details of the launch prior to the actual launch, so that they would be better prepared to deal with consequences which are often inevitable, even if they are of a positive nature.

After the launch of the OI pilot project, much of the focus was contained internally in Eskom in managing and operationalising OI inside Eskom, and there was insufficient communication with the external media to keep the levels of excitement and interest at high levels. In addition, the media coverage could have been wider to engage with more possible inventors across South Africa.

It was a problem during the process of building the local eco-system (database) to motivate potential inventors and other stakeholders to register on the OI platform when they did not have specific solutions to submit for the selected technical challenges. Eskom had hoped to build a wider database of South African inventors in the energy arena which could be leveraged at a later stage, and not merely for the particular challenges posed at present. It was also felt that the OI eco-system should have been managed better in order to “keep it alive” during and beyond the OI campaign.

5.2.2 Successes/Opportunities

The media engagement and launch of the OI pilot project (for the local launch) adopted a big bang approach and the response from South African innovators was far above expectations. The brand name of Eskom was certainly positively affected by embarking on OI, although this was not one of Eskom's initial objectives. Eskom was obviously seen as an organisation wanting to partner with external stakeholders and inventors to find solutions for problems, and as wanting to contribute to economic growth in SA and not afraid to admit that there were problems to be solved that South Africans could assist with openly. A total of 333 stakeholders attended the national workshops held in all the major cities of South Africa, including Johannesburg, Pretoria, Cape Town, Port Elizabeth and Durban. This was a positive side effect which would build Eskom's reputation as a driver of innovation.

A consideration for a media launch that might add value in building anticipation could be a run-up to the launch instead of a big bang approach. This should be deliberated after the launch so that the media could be engaged to keep them interested and excited.

There were various positive spin-offs during the Connect phase, in that Eskom forged close partnerships with stakeholders such as the

TIA (Technology Innovation Agency), the CSIR (Centre for Scientific and Industrial Research) and other innovation players in South Africa. These partnerships will add incremental value to Eskom in the course of time.

There may also be prospects in future of providing additional opportunities to innovators to expose themselves more on the OI platform so as to enable their own growth. Accordingly, providing open opportunities to these stakeholders, not merely from an Eskom perspective but also by taking a two-pronged approach would create a win-win situation for all parties, going beyond the present issue of Eskom's problem solving.

Using existing global platforms such as NineSigma (for the global challenge) allows an organisation such as Eskom to leverage global knowledge resources without the cost of building such a platform, as it takes time to grow a global network of about two million potential solvers. This shortens the turnaround time and speed to market, accelerating the innovation cycle. However, since most of the local responses emanated from SMEs (at least 52%), this indicates that OI in the South African environment provides opportunities for economic growth by stimulating SME growth, which could be explored further during future OI projects.

5.3 Evaluate phase

5.3.1 Challenges/Lessons Learnt

There were incidents where top-level management signed off a challenge definition during the DEFINE phase of the methodology, but when solutions were evaluated by the technical experts during the evaluation phase, these experts did not always believe that these solutions were aligned to their technical problems. This could mean that the definition of a challenge did not contain enough detail to elicit the right responses or solutions.

It was also highlighted that the evaluation team should also have had some external stakeholders, for example from the customer base, in the evaluation sessions, as they would have added value to the review of solutions in matching these to real problems. It was also stated that high-level

management should form part of the evaluation process since the definition is signed off at this level, as it would facilitate buy-in at a later stage. Delegating the OI-related functions lower down in the hierarchy also posed problems as this inhibited top level management's buy-in later on in the process.

Furthermore, since the OI project fell beyond the job mandate of most members, the co-ordination of time for the evaluation process posed challenges as the evaluation meetings had to fit into busy individual schedules.

For future IO projects, the Eskom employees involved should be mandated and compacted to take part as this would encourage commitment to the project.

5.4 Acquire phase

5.4.1 Challenges/Lessons Learnt

Governance processes and procedures always pose challenges, in particular for public organisations. In South Africa, public organisations have to comply with the Public Finance Management Act (PFMA), which has strict processes and procedures for contracting with external providers in the supplier chain management process (SCM) (National Treasury, 2012). The procurement process has to be completely transparent and all purchases (services and products) should go through a tender process which is a time-consuming process. Therefore, finding new ideas external to Eskom through an OI process still has to comply with governance procedures and policies and cannot sidestep the process.

With reference to Figure 1 which depicts the OI readiness of an organisation, it is critical for an organisation to be enabled internally to deal with OI. If it is not geared for OI internally (procurement and legal, for example) this could

certainly pose challenges and delays later on in the OI process during the Acquire phase. Often smaller inventors cannot afford lengthy tender and evaluation processes and have expectations that they will connect with an organisation such as Eskom through the OI process, and not have to follow an extensive and time-consuming tender process where they have to compete once again against other innovators through yet another process. It is therefore critical to engage the procurement and legal functions in the business, before initiating an OI project, as complying with the defined governance principles and procedures will cause a bottle-neck later on in the process.

Consideration should also be given to advancing the tender process at a far earlier stage in the OI process instead of at the current later stage. Furthermore, inventors should be sensitised beforehand to these policies and procedures, even as early as during the Connect phase.

6. GENERAL OBSERVATIONS AND LESSONS LEARNT

The main objective of the IC Unit in Eskom is to be a catalyst for innovation and to nurture a culture of innovation at Eskom across at least 40 000 staff members in the organisation. As IC is not mandated to come up with ideas and “sell” these to the business, implementing OI at Eskom was not within Eskom’s usual operating structures. For this reason, temporary structures were initiated. Considering that innovations either come from within the R&D Division at Eskom or are instigated by the business itself which may result in an R&D project if the solution is technical, OI was (and may still be somewhat so) a foreign concept to Eskom and is yet to be fully entrenched in the business to ensure complete buy-in across the various divisions. Uplifting Eskom to higher levels of enablement (as per Figure 1) may require a deeper level of internal sensitising, cross-functional engagement and change management, aligned with more permanent OI strategies, structures and resources to enable a sustainable OI solution at Eskom.

An Eskom leader involved in the OI pilot project indicated that existing, but completely unknown and novel innovations are in a minority across the world and that business stakeholders should look not only for the “WOW” factor but also for the “HOW” when searching for innovative ideas, because what makes OI so compelling is that it is a novel connector of innovations to existing problems across disciplines. What was indicated was that: “It is not just the dots that are important, but rather the joining of the dots. OI is about the arrow joining the blocks of knowledge.” It is also a belief among the Eskom leadership that an innovation identified is not an innovation until it has been implemented successfully. The

acceptance and diffusion of innovations are often a time-consuming process and in Eskom the question whether this OI pilot project was a success still has to stand the test of time before it can be answered, especially in view of the way in which success is measured at Eskom: “Applied innovation is a critical measure of success.”

Apart from the fact that the OI pilot project generated multiple solutions to problems, many other spill-over benefits have already been realised, including the branding of Eskom as an OI leader in South Africa, the many strong partnerships forged, alignment to Eskom strategic objectives, the internal motivation and excitement that have been aligned with a more collaborative way of enabling innovating and the potentially huge opportunities associated with SME stimulation, which could ultimately have a very positive effect on the South African economy.

In terms of local versus global OI, stimulating innovation in the local South African environment would mean enormous opportunities for local economic development. Associated with the specific parameters in the definition of the actual problem/challenge which could be aligned with job creation, the benefits of these opportunities could be gained through an OI process. Evidently global OI could connect South African organisations to previously untapped networks, innovators and potentially novel innovations aligned with unsolved problems, especially considering that the maturity level of innovations emanating from the global environment was marginally higher than the maturity level of local solutions. The Eskom leadership also believes that directly involving the inventor with the implementation of the innovation could also be beneficial to speeding up the buy-in and diffusion process of ideas at Eskom.

7. CONCLUSIONS

The IC Unit's mandate since 2005 has been and still is to stimulate a culture of innovation at Eskom across approximately 43 000 employees. This culture has contributed to enabling Eskom to take a step closer to the "Optimised Open Innovation" status that is defined in Figure 1. However, for Eskom to embrace OI fully and become an optimised OI-enabled organisation, Eskom would have to enable internal divisions, policies and procedures such as governance and compliance,

which would be a challenge in itself considering the stringent public policies with which the organisation has to comply. Finding a middle way would be an opportunity for Eskom since OI, in particular through local eco-system development, would stimulate economic growth in South Africa and provide opportunities for small and medium players in the energy arena to become part of Eskom's innovation process that would "connect the dots" and enable a better future for all.

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“Eskom Holdings SOC Limited (Research, Testing and Development) embarked on an Open Innovation pilot project in 2011 to fast-track finding solutions to strategic challenges by leveraging off an existing global system of solution providers, while creating a local ecosystem of stakeholders and energy solution providers. The pilot represents a major milestone in Eskom’s journey to create an energy innovation ecosystem. This case study highlights key lessons learnt from the pilot and serves to inform recommendations for OI programmes, especially in South Africa.”



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