# Open Innovation Responsibility

## Why Integrating Stakeholders is Crucial to Innovation

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This paper suggests that modern organisations should open their innovation process and shift their focus to socially beneficial innovations. Global stakeholders bristle with ideas to improve products and services. At the same time, they have legitimate claims that can only be met if responsible organisations apply their core competency. In this context, global development issues become relevant: Opening up large markets in developing and newly industrialising countries bears enormous potential. Meanwhile, corporations are capable of solving social problems in these markets, promoting their role as responsible entrepreneurs who care for their stakeholders beyond economic interests. Simultaneously, Open Innovation processes enable organisations to benefit from an ever increasing developer community. Thus, combining the concepts of Responsible Entrepreneurship and Open Innovation, this paper argues that corporations will benefit from opening their innovation processes to a broader stakeholder community.

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## *1. Introduction*

"We do not necessarily need more innovation. We need better innovation that is fast, open and global" (Lindegaard 2010). For a long time, it has been underestimated what Stefan Lindegaard, author of The Open Innovation Revolution, expresses with these words. Nowadays, we live in a world where hundreds of mobile phone applications are programmed each day; where open software projects enjoy increasing participation and popularity. However, it is also a world where more than half of the global population can only dream of these latest innovations. Their needs must be met as a matter of responsibility and their demands must be satisfied as a matter of business strategy. Consequently, the environment of organisations turns into a complex network of ideas, interests, and claims. How can organisations respond to these developments?

What we claim is that global stakeholders are in a better position to tackle this question than a specific Research & Development (R&D) department or any specific company. What we call Open Innovation Responsibility (OIR) is a promising strategy that integrates stakeholders into the innovation process and thereby pursues business goals while at the same time taking on social responsibility. If organisations want to generate progress, they have to listen to stakeholders and to collaborate with them.

In this paper, we will show why integrating stakeholders (in such a way) has become crucial to innovation. As a first step, we will examine responsibility and its relevance in organisational as well as innovation contexts. We will argue that organisations must face their social obligations and act responsibly (section 2). From this, we will move on to demarcate some terms and concepts regarding innovation. We will explain why creativity and innovation play a crucial role in an organisation's existence (section 3). Subsequently, we describe what we mean by Open Innovation Responsibility. Employing a precise idea of this concept, we examine the market at the bottom of the pyramid and explain how both the organisation and society will benefit from the systematic integration of stakeholders into the innovation process (section 4). The following section includes managing advice and best practice examples (section 5), which are then transformed into a specific tool and applied as the Open Innovation Responsibility Platform. Comments will focus on implementation at the Nokia Corporation (section 6). Thereafter, we will give an overview of the implications and advantages of such a tool (section 7). The paper is rounded off with some concluding remarks and prospects (section 8).

## *2. Responsibility*

### *2.1 Concepts of Responsibility*

The term responsibility is derived from Latin respondere which means to give an answer. This already implies the involvement of two people: If there is one subject who has to answer, this must be a reaction to another person who requires him to answer. Responsibility is about communication. It involves a discussion between at least two individuals in which one of them is requested to answer for his actions and now has the possibility to justify his behaviour (cf. Bayertz 1995: 16). Imagine a mayor woman tumbling while crossing a street, whose attempts to get up remain unsuccessful. A nearby passenger observes the accident but does not help her. The mayor woman or another passenger could then request an answer from him; they want to know why he kept on walking and did not help. They attribute responsibility to him, which involves reference to a system of norms or values. Without this reference, responsibility would be a merely descriptive concept. So, in our example, the reference would be to the convention that mayor people should be offered help in situations they are incapable of coping with. Hence, we already have four elements of responsibility: (at least) two people, one action, and one criterion. Here, it should be noted that organisations are in a situation in which a response is expected by their stakeholders – and it is precisely this responsive notion of responsibility that is the underlying idea of our Open Innovation Responsibility concept to be presented later on in this paper.

Today, responsibility is commonly seen as a multi-relational concept (cf. Höffe 1993: 23, cf. Lenk/Maring 1995: 247). Concepts of responsibility differ in terms of how many dimensions are employed to differentiate the term responsibility. One widely accepted concept was presented by Hans Lenk and Matthias Maring. They characterise responsibility as follows:

> "Someone: The subject or bearer of responsibility […] is responsible for: something […] in view of: an addressee […] under the supervision or judgment of: a judging or sanctioning agent in relation to: a criterion of attribution of accountability within: a specific realm of responsibility and action" (Lenk/Maring 2001: 95).

So we recover the subject of responsibility who has to answer, the something which can either be an action or a condition to be achieved, an addressee who demands an answer, and the criterion of

responsibility attribution. Moreover, they introduce the elements of an instance of judgment, which could be a court, god or the conscience, and a specific realm which would be traffic in our example.

The addressee (Anton) blames or praises the subject (Susan) for an action, depending on whether Anton experiences good or bad consequences. Anton asks Susan for the motives behind her action. Susan is required to answer. If her motives are not judged to be valid by Anton, he attributes moral responsibility to her. Thus, in this classical understanding, the concept of responsibility helps us to attribute consequences to someone's action. In case of negative consequences, for instance, we interpret a situation or a person's action, and, if there are no releasing factors as a conclusion, we attribute responsibility to him, and demand a punishment or compensation. Such understanding of responsibility is retrospective: It is ex post, as responsibility is directed to an outcome or an action that has already taken place (cf. Bayertz 1995: 6ff.).

Over the last centuries, another concept of responsibility has evolved. In the course of technical progress and increasing division of labour, the interpretation of situations and the determination of causes became increasingly difficult. External effects influence the outcome of the individual's action so that the consequences have become difficult to attribute. The search for the responsible individual can be so difficult that we pass to holding people responsible for conditions. We attribute responsibility to them to ensure that a certain condition will be achieved or be upheld. This type of responsibility is often attributed to certain roles. An engineer may be held responsible for his work to be safe so that people's lives are not endangered. This is a responsibility attached (specifically) to the role of an engineer. Here, we find thus a new understanding of responsibility, one that is directed towards the future. It is a prospective or ex ante responsibility to achieve a condition or an end (cf. Bayertz 1995: 24ff.), one that is akin to the concept of duty. Both the prospective and retrospective responsibility can be related to innovation.

With regard to innovation in particular, Kurt Röttgers discusses two kinds of responsibility (cf. Röttgers 2009: 442). The first is the responsibility to innovate, i.e. a responsibility to ensure the condition that innovation takes place. We believe that organisations are responsible in a sense that goes beyond plain economic interest. We will discuss the reasons for a broader responsibility concept later in the paper.

The second responsibility is the responsibility for innovations. This is the responsibility for good or bad consequences of actions that have already taken place. Regarding organisations, the responsibility refers to outcomes such as products and services. In the case of good consequences, customers attribute praise to the organisation. However, in the case of failure, the customer will

attribute the bad consequences to the organisation, blame it, and probably will assign responsibility to it. Several product recalls, for example Toyota (cf. BBC News 2010) but also Nokia (cf. Paul 2009), show that organisations do accept this responsibility. This is also reflected in legal regulations such as warranty contracts.

### *2.2 Responsibility in an Organisational Context*

For our purpose, it is necessary to show that organisations can be subjects of responsibility, because otherwise stakeholder discussions and Open Innovation processes would become mere voluntary acts of benevolent organisations. However, we do believe that these responsibilities can be assigned to organisations and we will demonstrate this in the following argument.

Peter French sees corporations as moral persons and attributes responsibility to them because they seem to form and realise intentions (cf. French 1984: 38f.). We do not think that the formation of intentions is enough to qualify as a moral person. In fact, we will not speak about moral persons but about moral agents as the multitude of existing definitions about what constitutes a moral person might cause unnecessary discussion. The term moral agent is much less disputed: A definition that captures the most frequently discussed issues has been introduced by Braham / van Hees, who suggest that a moral agent is an autonomous, intentional, and planning agent who is capable of distinguishing right and wrong as well as good and bad (cf. Braham/van Hees 2010: 7).

Another scholar, Philip Pettit, argues that collectives are agents in a functional sense. He holds the view that

> "[a] system will constitute an agent if it forms and reforms action-suited desires for how its environment should be and action-suited beliefs as to how its environment is and if it then acts in such a way that those desires are satisfied according to those beliefs" (Pettit 2007: 178).

This definition of agency allows us to regard organisations as agents. If members act in the pattern of coordination, they will act as a single unified agent, and they will adopt decision-making mechanisms that ensure this agency. As this conceptualisation of agency involves the desire-belief model that is mostly used to explain the notion of intention, we will discuss this issue now, before examining the issue of autonomy. The desire-belief model states that actions can be explained by

a desire and the belief that a certain action is a way of fulfilling this desire. Given the desire and the belief, there are reasons for the actor to engage in an action (cf. Bratman 1995: 375). According to this model, organisations can form desires and beliefs since they can form judgements of the issues presented to them for consideration. They give their assent according to the accepted decision-making mechanisms – for instance, in the form of a vote. Thus, they can adopt desires and according beliefs of how to achieve them, i.e. they can have intentions and can make plans.

Some philosophers argue that it is not the collective which has the desires and beliefs but its members. According to this view, the desires and beliefs embraced by collectives do not dispose of any novelty. This objection leads us to the next issue, namely the condition of autonomy. It can be shown by impossibility theorems that the desires and beliefs held by a collective cannot be derived from the desires and beliefs of its members. The collective's beliefs and desires are no function or combination of functions of them. An organisation is required to behave in a consistent way, as otherwise people would not form binding contracts with it. An organisation is expected to have a complete and consistent set of views. Thus, if it for example, always followed the majority of its members' opinions, the organisation would soon have to face serious problems because it would be said to act in an irrational way. As a consequence, the members have to embrace a practice that allows them to ensure that the set of attitudes they accept and enact in the group's name is internally consistent (cf. Pettit 2007: 181f.). Thus, the beliefs and desires of the organisation are independent of those of its members and the organisation can be regarded as an autonomous agent.

With regard to the capacity to distinguish right and wrong as well as good and bad, one needs to consider that a collective can form judgements over potentially any proposition that may be presented for consideration. In such cases, the collective takes the steps required by its decision-making mechanisms to decide on it. These may be, for instance, taking a vote or making a decision by an authorised member. Hence, the collective will be able to judge any proposition that is presented and that can be adjudicated. The members will be able to present evaluative options to the collective for consideration and will be able to decide on them. Consequently, the group agent is able to form value judgements about the options it faces in virtually any choice.

Since all requirements for moral agency are fulfilled, it follows that all collectives possessing decision-making mechanisms, such as business organisations, qualify as moral agents. This makes them candidates for being morally responsible.[1] The fact that organisational behaviour can be

1 For further reading on moral agency regarding companies, see Pettit (2007), Copp (2006), French (1984), Lenk/Maring (1995).

subject to moral considerations is an important premise for our application of Open Innovation Responsibility (see section 4).

However, it has to be ensured that a replacement or disappearance of responsibility does not occur. This is an important issue for organisations, as the division of labour tends to entail and even encourage a diffusion of responsibility (cf. Lenk/Maring 1995: 276f.). In modern organisations, it is common practice to work in groups and only for a short time on a particular project. Social psychology scholars have found that with increasing group size, the perception of responsibility decreases and risk affinity increases (cf. Latané/Darley 1970: 52ff., cf. Leary/Forsyth 1987: 169ff.). Opposing this view, there are insights arguing for the possibility to counteract such diffusion of responsibility. It is known from social psychological studies that responsibility is more apportioned to group members occupying a central position in the group, having special expertise, and playing a more active role in the group's activities (Leary/Forsyth 1987: 167ff.). Moreover, it was also found that group members who felt that they had been given important tasks reported feeling more responsible for the group's overall performance. Those with special expertise or knowledge were more likely to take on responsibility for helping, and group leaders generally took more credit for their group's products than others, and in some cases members agreed with their leader's responsibility claims (cf. Forsyth/Zyzniewski/Giammanco 2002).

Hence, in order to tackle the diffusion of responsibility, it is necessary to motivate people and to underline the common task's importance. Furthermore, competencies and tasks must be distributed. Every single member needs to take over a leading role in the area of his competency, i.e. where he is an expert. As will be seen, this is precisely what Open Innovation Responsibility fulfils, as it assigns importance to every member's contribution. If members experience that their ideas and knowledge are respected, they will feel more responsible for the success of the project as a result.

### *2.3 The Responsibility of Organisations to Innovate*

In general, all companies have an interest in innovation, because it assures their economic success. This interest can be more or less central to their core business. There can be minor innovations that only make daily business more effective, for instance, new software, or there can be innovations that refer to the organisation's core business, such as the light-emitting diode (LED) technology, which revolutionised the lightning industry. We believe that it is organisations whose core business

centres on innovation that bear a moral responsibility to innovation, and that stakeholders bear a responsibility to encourage these innovations.

Nowadays, all organisations are situated in a net of relations to other organisations, suppliers, customers, media, and so forth. They are connected through a multitude of relations to their stakeholders. Freeman, who significantly shaped stakeholder theory, argues that stakeholders are groups or individuals who are "affected by or can affect the achievement of an organisation's objective" (Freeman 1984: 46). The organisation's success depends on the cooperation with different stakeholder groups. Over the last years, it was especially customers who detected their power to influence organisations as the increasing number of customer boycotts show. However, the same holds true for the stakeholders' perspective (cf. Mahoney 1994: 212), so that a kind of reciprocity exists here. Such reciprocity is important for the allocation of responsibility as well: On the one hand, an organisation owes responsibility because it affects stakeholders' quality of life. Moreover, some stakeholders experience an imbalance of power. Customers, for instance, are usually not organised and, as individuals, their wishes and demands are often not heard. Only if they organise and, perhaps, involve the media does it become possible to perform as an agent of equal power. On the other hand, the stakeholders also owe responsibility to the organisation, because the organisation depends on them. In the example of the customers, it is their responsibility to reward business organisations that show good governance.

It is notable that there has been a massive increase in responsibility assigned to organisations. For instance, it is frequently claimed that they will reduce emissions, control the conditions under which their suppliers produce, publish elaborate reports, or provide child minders for working women. Organisations are challenged to fulfil these expectations on their own. In this paper, we claim that in organisations, responsibility should be assigned to all parts of the network, including the stakeholders. Hence, organisations are not overstrained and stakeholders support what they have an interest in. Regarding innovation, stakeholders have to enter a dialogue with the organisation about their needs and wishes. They must announce their critique and their ideas and thereby help the organisation to develop successful products and services.

As such, organisations are responsible towards their stakeholders. Organisations should help to improve their stakeholders' quality of life by responding to their claims and wishes. This can be done if they use their core competency to meet the stakeholders' necessities. An insurance company, for example, is specialised in risk calculation and data collection. It is the company's expertise that creates a benefit for the customer and provides a competitive advantage for the company. It can,

for instance, use its knowledge and facilities to prevent catastrophes resulting from insufficient safety measures in areas traditionally hit by earthquake. If organisations use their core competency in this way, they can help to solve social problems efficiently because they contribute what they are best at. Addressing this responsibility, in turn, will enhance their sense of embeddedness and acceptance in society. The predominant addressees are current and potential stakeholders who are located all over the world. Organisations can help to improve their stakeholders' quality of life. These improvements may be of particular moral worth regarding those potential stakeholders who lack the resources to live a self-determined life, but this presumes that organisations anticipate the dimensions of development on the basis of a partnership with stakeholders. Partnership and cooperation will help to identify stakeholders' actual needs, leading to an optimisation of the innovative cost-benefit relation. The democratic account is propitious to fulfil organisations' responsibility since it meets precisely the stakeholders' needs

## *3. Innovation*

### *3.1 New*

So far we have seen how responsibility links in with modern organisations and their innovative behaviour. But what exactly is innovation? In this section, we will first explain the philosophical basis of newness per se, and then go on to outline the role of inventions and innovations in an organisational context.

The ancient Platonic dialogue of Meno serves very well to grasp the meaning of the term new. When Meno asks whether it is possible to teach virtues, Socrates responds: How can I tell you about the nature of virtues when I do not even know what they are? Or analogously: How can anyone tell about Meno's look, richness and courage who does not even know him? The essential question of the dialogue is: How could anything possibly be defined? More importantly for us: How can we search for something which is not yet defined (cf. Plato 370 BC: 70 A 1)?

The principal point illustrated by Plato's Meno Paradox is that we experience difficulties in handling things that are – in some way – unbeknown to us. On the one hand, there are things that we already have a clear concept of and that are thus not new. On the other, there are things that we are not aware of, i.e. genuinely new things. Since we do not even know whether the latter

exist, we are quite unable to make truly informed statements about them. Consequently, one might argue that there is no such thing as newness at all. So how can we talk about new things?

Fortunately, the issue is a good deal more complex. There is not only an epistemological categorisation about the term new, as there might also be things that we simply have not discovered yet. Therefore, it will be necessary to apply a second distinction, an ontological one. Consider, as an overview, the following structure:

| | UNBEKNOWN | KNOWN |
|---|---|---|
| EXISTENT | NOT DISCOVERED | OLD |
| NOT EXISTENT | NEW | EXPECTED |

FIGURE 1: NEWNESS IN ONTOLOGICAL (EXISTENT/NOT EXISTENT) AND EPISTEMOLOGICAL (UNBEKNOWN/KNOWN) CATEGORIES (SOURCE: OWN SOURCE)

Let us start in the top right-hand corner. A mobile phone is both existent and well-known. It is old. An efficient solar-powered mobile phone is a well-known idea, but not yet existent (not successfully put into practice). It is expected. So, the bottom right-hand category shows that there must be something in between new and old, as does the top left-hand one. Some environmentally-friendly material for the next generation displays may well exist, but it has not yet been discovered by producers. The most radical concept of newness is represented by the bottom left-hand category. Naturally, there can be no concrete example for this type.

This proves that we do not have to commit ontological fallacies to find new things. Indeed, with the above table, we can develop a precise idea of how to search for the new. The modified structure with its four categories indicates that there is no need to look for old things, and we cannot look for something that we do not know. However, there are also two areas in between: First, we can search for technologies to produce, for instance, a solar-powered mobile phone, since we have a clear idea of the outcome. Second, we can search for material for our new mobile display, since we are convinced that it exists but we simply have not discovered it yet. It is by such means that mankind has continuously progressed.

Let us go on and consider an example of technological advance. "The horse doesn't eat cucumber salad" (Selger 1997) – When Johann Phillip Reis, in 1860, said these words into what may be called the first telephone, he had not found something new right away. In fact, Reis used

these rather odd words to prove that he and his colleagues had not agreed in advance on what they were going to say. The telephone did not simply pop up as something radically new. Reis had been frustrated with the inability to communicate over distance and, inspired by his frustration, he had conceived of an idea to solve the problem. His concept of the new challenge was precise enough to develop a technology to solve it. As a last step, Reis put this technology into practice.

People have often searched in such systematic ways for challenges and improvements. One of the earliest and most prominent examples is probably the wheel and wheeled vehicles. With advancing technologies, the complexity of new things grew. One might find that many of today's new things are created in a generic manner: First, we find ourselves a new challenge or a new focus (e.g. travelling to the moon). Second, we address this challenge with a new product or a service (e.g. a spaceship). This distinction between the challenge and the solution is of great importance, and we will later argue that in commercial innovation processes, both steps can benefit from external input and expertise, improving an organisation's interaction with stakeholders. Beforehand, however, let us take a more detailed look at how new things are actually generated.

### *3.2 Creativity*

Creativity is defined as the process or activity of finding and inventing new things. The term may refer to a problem, a process, a person, or a product. In either case, a reference person or society must show a certain attention to the new. For if it did not, creativity would become a trivial process – one may dispute the worth of abstract art but it certainly is something creative, whereas a handshake to a stranger is merely an action that has never occurred before (cf. Schmidinger 2008: 12f.). Thus, creativity seems to be somewhat significant to our society, but in what way exactly?

As argued, creativity is the presupposition of non-trivial change. And change, in turn, is a presupposition of improvements. However, creativity can only produce advances if an audience appreciates the creation. This applies in particular to contexts involving competition: It is vital for political parties to appear distinctive and remain attractive for the electorate, and it is vital for companies to offer innovative devices and services to maintain a competitive advantage.

Unfortunately, as Gavin Peter Swann put it, "there are no rules for creativity, or if there are, nobody knows what they are" (Swann 2009: 25). Of course, there are scores of methods of creativity (e.g. brainstorming, mind maps). Additionally, there are, concepts to increase the creative potential of an organisation such as flat hierarchies, payment incentives, or further training. However, such

measures as such still do not guarantee successful creativity. Often enough, it is mere spontaneous, coincidental combinations of people, knowledge, and contexts that generate outstanding creativity, which would be impossible to rearrange purposely. One particular insight, however, is crucial for our argument: The outcome of a creative process will generally tend to be more successful the more people are involved in it, for the simple reason that, quantitatively, more input is given. Moreover, it will tend to be more relevant if the individuals participating in the process are the same ones that constitute the eventual target group of the innovative product or service, as their internal needs and wishes may be expressed at an early stage. In this way, organisations benefit from large creative networks (cf. Swann 2009: 147).

### *3.3 Innovation*

Leonardo da Vinci's helicopter was a great invention. But it was no innovation as it was not put into practise. In the most simple terms, an innovation is the successful implementation of new ideas. An invention, on the contrary, refers to ideas, sketches, or theoretical models for products and processes. If such a new idea is then commercially applied, it is called an innovation. Inventions are mainly generated by research departments, whereas innovations are nearer to the market and thus evolve from development departments.

Innovation allows a company to offer revolutionary, unique products and services. The key role in a market economy is played by pioneer entrepreneurs who constantly search for new combinations of production factors. Since the pioneer company gains monopoly profits, other companies are encouraged to imitate the product and join the market. Jospeh Alois Schumpeter (1883 - 1950) observed that it is

> "[t]he process of industrial mutation that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism" (Schumpeter 1942: 82).

Schumpeter's main implication for organisations is that innovation "must become in even greater measures the internal concern of one and the same economic body" (Schumpeter 1911: 67). This

is decisive for the company to rise or fall economically and socially. In the course of our argument, we will interpret this need for innovation in a more comprehensive sense.

### *3.4 Open Innovation*

In an age of internet-based communication, growing flexibility, and geographically expanding knowledge, classical R&D departments must reshape. In contrast to traditional innovation processes, Open Innovation systematically involves people from outside the organisation in two principal senses: First, innovations developed inside the organisation can be used for sale, spin-offs, and start-ups (Inside-Out-Process). Second, innovations developed outside the organisation can be transferred inside for further application (Outside-In-Process). Besides these main categories, there are, of course, hybrid forms such as co-creation. James Chesbrough, who has significantly shaped the concept of Open Innovation, defines it as a "paradigm that assumes that companies can and should use external ideas as well as internal ideas, and internal and external paths to market […]" (Chesbrough 2006: xxiv). It is, in particular, the Outside-In-Process, which is relevant to our argument.

The Open Innovation paradigm contemplates the end of knowledge monopolies, as universities, start-up companies, and individual innovators become important cooperators for organisations that want to keep up with the speed of the market. They must integrate outside expertise, because it entails an enormous source of inspiration and accelerates the innovation process. The Open Innovation paradigm also reduces costs for internal trainings and lifelong employment, as the organisation can access external knowledge precisely where it is needed. However, and despite that, Chesbrough suggests that an internal R&D department remains significant for filling in the missing pieces that are not externally developed (cf. Chesbrough 2006: 49ff.), as well as being responsible for bundling and managing external knowledge.

It is interesting to look somewhat closer at the source of benefits that Open Innovation incorporates. Generally speaking, one may say that groups develop an incredible dynamic of intelligence, knowledge, and innovative capacity. An example: In 1906, Francis Galton made a surprising observation: He went to a local cattle market and watched people guessing a bullock's weight in a competition. The arithmetic average of roughly 800 guesses deviated by only 0.8 per cent from the actual value. Galton concluded that there must be something like an intelligence of

the group. As one might expect, this procedure easily works for simple tasks, but it also has certain relevance for more complex tasks.[2]

In 1994, as one of the pioneers to write on this topic, French scholar Pierre Lévy published his work Collective Intelligence: Mankind's Emerging World in Cyberspace. Here, he discovered remarkably early – considering that the origins of the World Wide Web were only in 1991 – that human intelligence can be stimulated through interconnection and collaboration on a computer-based system. Back then, it was only a small group of scholars and publicists such as Douglas Hofstadter, Peter Russel, Francis Heylighen and Howard Bloom who pointed at the significance of collective intelligence in computer science and other fields. Ten years later, however, in 2001, one of the most prominent projects of collective intelligence was established: Wikipedia. Ever since, global corporations have copied or adopted the concept into their business model – consider, for instance, Apple's AppStore.

Another expert in this field, James Surowiecki, the author (2004) of The Wisdom of the Crowds, is of the opinion that there are four important principles to collective intelligence: Diversity, Decentralisation, Independence, and Aggregation. Consider, again, Wikipedia as an example: Its contributors are diverse, they live in different places, and they work independently. Furthermore, the Wikipedia website supplies a suitable method to aggregate the input, whereby knowledge is accumulated. This is precisely what Open Innovation does: Organisations incorporate diverse, decentralised solutions from independent innovators and bundle the solutions. In fact, for many corporations, Open Innovation is an upcoming paradigm.

## *4. Open Innovation Responsibility*

### *4.1 The Concept of Open Innovation Responsibility*

In this section we present our paradigm of Open Innovation Responsibility. We would like to sensitise our readership to innovations that entail more than economic advantages. For an explanation, consider again the example of Wikipedia: The Wikipedia project involves more than the mere accumulation of knowledge. Instead, by enabling free and open access to knowledge, Wikipedia

2 Physicist Norman L. Johnson found that individuals did worse at escaping a computer simulated labyrinth than they would have done with combined knowledge (cf. Surowiecki 2004: 27).

creates social welfare. For example, this is a big advantage for schools in rural areas. Furthermore, as everyone is free to write on Wikipedia, the website demonstrates freedom of speech – a fortune for inhibited members of political oppositions.

When Jimmy Wales founded Wikipedia there was one thing he had understood long before others: No organisation is fast and wise enough to respond to all its clients' demands. Thus, it can be potentially helpful to integrate these clients, in order to accelerate solution development processes and respond more accurately to their demands. In the case of Wikipedia, this is achieved by its open and user-optimised writing and editing facilities with the result that, today, no encyclopedia is faster or more precise.

However, this principle is not restricted to the information technology sector. Organisations in other industries are similarly impacted by clients' demands for individualisation and personal adaptation of products. Common demands have also changed towards ecologically and socially responsible solutions. At the same time, organisations' reciprocal influence on society and culture has increased, which has resulted in a new market environment with a stronger interplay between actors. Hence, innovation can nowadays no longer be an exclusively internal process of R&D departments. In this respect, Open Innovation Responsibility (OIR) goes even one step further, as its core idea is to provide a structure that encourages beneficial innovations, resulting in a greater number of social innovators.

> Open Innovation Responsibility is the paradigm to provide institutional structures which encourage beneficial and truly useful innovations.

"But why should we pay attention to societal utility?" Schumpeter might ask. Would we not thereby restrict our perspective to customers' demands as the primary objective of a successful organisation?

Society rewards companies that apply their knowledge and power to help the underprivileged and the environment (cf. Waddock/Graves 1998: 304). In order to gain customers' rewards with social focuses, authenticity is crucial. Consider this example: A bank is less authentic in donating food and medicine than in establishing a microcredit system. Credit is, after all, the core business of a bank, and the microcredit is an innovative and feasible modification of it, as the bank will receive economic value from a new client. Moreover, the already existing customers enhance their loyalty to the bank as they reward socially beneficent actions. At the same time, the client may both improve his economic status as well as upgrade his quality of life. Thus, the example shows

that Open Innovation Responsibility is no simply philanthropic behaviour. Rather, at the same time that it recommends that organisations concentrate their help on what they are best at, it is also a call on organisations to act responsibly as part of their innovative business strategy and to generate economic value together with social utility (cf. Prahalad 2005: 5).

This so-called doing good by doing well attracts both stakeholders and shareholders. Evidence of this may be found when considering investors' preferences for sustainability, employees' motivations, or customers' preferences for supporting an honourable company (cf. Mackey/Mackey/Barney 2007: 828).

In conclusion, the concept of Open Innovation Responsibility provides the organisation with a chance to innovatively develop responsible products in an open network of demanders and creators. Its advantages are an incredibly fast innovation chain, the establishment of new markets, financial profit for corporations, and a high common value for society. As long as poverty determines the lives of people all over the world, these people are not seen as potential customers. However, we believe that Open Innovation Responsibility bears the potential to change this by integrating their needs and ideas: It may open the door to a 5 billion person target group, and will additionally provide a feeling good by doing good personal motivation for investors, inventors, managers and employees.

### *4.2 The Market at the Bottom of the Pyramid*

As an example of the utility of Open Innovation Responsibility, we mentioned the potential capture of a 5 billion person target group. This market will evolve as soon as organisations start focusing on "unexpected" targets such as "poor people". Since "poor people" is no decent term, Coimbatore Krishnarao Prahalad (2005) has introduced the term "people from the Bottom of the Pyramid (BOP)". The bottom of the pyramid refers to 80% of humanity (5.5 billion people) living on less than $10 a day (cf. World Bank 2008: 16). However, is it plausible at all to regard them as prospective customers? Can they afford high-quality products?[3] Will they reward innovativeness and buy the product? Will they grasp the need for innovation and engage in Open Innovation?

Today, 76% of the world's consumption is created by the 20% who are the richest people (cf. World Bank 2008: 3). Hence, these 1.3 billion are the prime target group of most corporations. Here, the margins are high, the turnover is good, and the distribution is easy due to a well-developed

3 Calculated with Purchasing Power Parity.

business infrastructure. Furthermore, people in developed countries are wealthy enough to consume more than they need for their basic living conditions. Thus, it is unsurprisingly especially food, pharmacy, software, and consumer-electronic industries concentrate on such wealthy customers, also due to high innovation costs for their products.

Why are people from the BOP not seen as a target group? Let us discuss two stereotypes: Firstly, managers underestimate the BOP's purchasing power. Secondly, they have the wrong image of the BOP market infrastructure (e.g. internet access, transportation), and thus worry about product distribution.[4]

Undoubtedly, no one living on $10 a day will buy a mobile phone from Apple, and someone with a daily income below $5 will even have to restrict his purchases exclusively to food and basic needs BOP people are thus more likely to invest in products they consider as absolutely necessary. However, once their demands are understood and organisations start regarding BOP people as "customers", the market will reveal its potential dimension: 5 billion people, representing 80% of the world's population, with an approximate purchasing power of $11.6 trillion (cf. World Bank 2008: 16). Moreover, the market of the BOP includes 29 of the 35 fastest-growing economies in the world (cf. Dow Jones List Emerging Markets May 2010). Taking these facts into account, the purchasing power of the BOP market becomes immensely attractive and can seise corporate profit.

The second prejudice among managers about a potential market at the BOP is that distribution is complicated and the infrastructure, especially in rural areas, may not be sufficiently established. In fact, however, organisations can make use of the present spirit of commerce and of an uncountable number of micro-businesses. This entrepreneurship attitude might lead to the development of distribution networks. One example may be seen in the Coca Cola Company's distribution network which is responsible for selling 1 billion beverages daily in more than 200 countries, and reaching even the smallest villages. So apparently there is indeed a way to establish lucrative distributive structures in BOP countries: Coca Cola sells and serves at shops that are nonetheless integrated into the communities. Furthermore, they produce in a decentralised fashion and close to their customers, as the use of exclusive retailers or flagship stores may not be attractive. In addition, many BOP cultures are very communicative, which bears the potential that they will participate in stakeholder dialogues (cf. Fuglesang 1973: 48). Here lies a clue for services and customer relation programs. No doubt, the worldwide coverage of internet access to ensure communication is only a matter of time.

4 For a more detailed discussion about general assumptions towards the BOP, see recommend Prahalad (2005).

The central idea of Open Innovation Responsibility is to engage interaction between stakeholders regardless of their financial status, acknowledging their necessities and ideas, in order to start searching for solutions and to thereby (ultimately) create corporate and social profit.

### *4.3 The Value of Open Innovation Responsibility at the BOP*

The charm of Open Innovation is its democratic approach: People can participate in the innovation process and benefit in return. It is important to direct people's attention to the worldwide developer community. Motivation may come from financial benefits, the social impact, or the respect paid in open software communities. From a moral perspective, Open Innovation has at least three advantages: Firstly, the organisation is given a better chance to identify morally relevant innovations from a broader range of stakeholders (e.g. BOPs). Secondly, a greater number of solutions will thus be at hand, and thirdly, the organisation can exercise its power to subsidise specific ethical solutions and prevent immoral solutions. This is a potent tool for organisations that consider Open Innovation Responsibility, as through these subsidies, developers are encouraged to create social-value-innovations, which will again attract customers.

Let us illustrate this process with an example: Indian pupils usually have to complete their homework after sunset because they must help at family businesses. Imagine that one child submits her problem as a challenge to the platform. There, her idea is discovered by a Finnish light engineer who has no competency in software engineering, but who has an idea about how to use a mobile's display as a source of light. Thus, he uses his knowledge of energy saving techniques: After having explained his idea on the platform, a software developer in the community gets involved and writes the application "Ambition-Light". The product can now be sold on a market – comparable to Apple's AppStore – at an affordable price, perhaps 2 rupees.[5] Selling the application in this way to several millions pupils would eventually generate an extraordinary profit and a social value to many pupils.

But why sell the application at such cheap price? On the AppStore, those applications sell at $0.99 and more. Of course, for 45 rupees, no Indian child in the BOP target group could afford to buy the product. But the engineers have good reasons to sell it at a cheap price: Firstly, they acknowledge their responsibility, especially towards BOPs. Secondly, they will have the prospect of a much larger customer base by offering it at a lower price. Thirdly, the customers will tend to be

5 2 rupees equal $0.033 US / $1 ≈ 60 rupees (08/2014)

more loyal to such an organisation, because the product is socially responsible and utile. Fourthly, many humans have a philanthropic attitude: They will feel better for creating a light application for Indian pupils than for programming the same application to help drunken dentists' kids finding the keyhole at night. Even though the latter example is admittedly quite polemic, only a marginal number of iPhone users use the "Ambition-Light" App sincerely, i.e. to do their studies under bad lighting conditions. Most of the applications on the AppStore are "nice to have"-products for credit-card owners.

To conclude, one may thus say that, in order to succeed in BOP markets, corporations need utile and socially useful products that BOP customers will regard as upgrades of their personal quality of life. Open Innovation is the cheapest way for a corporation to invent these products, as, in this way, extensive market research costs may be saved. Eventually, this will result in positive price effects, leading to lower fixed costs of innovation. The savings may then be reinvested in subsidies and platform support.

## *5. Best Practise of Open Innovation Responsibility*

### *5.1 ITC and its e-Choupal*

The concept of OIR is promising and has already been realised with great success. The ITC group is an Indian corporation with a market capitalisation of about $4 billion. Their business segments are hotels, paperboards, packaging, agribusiness, packaged food, and more. In particular, ITC has developed a network of small online information desks, called e-Choupals. At the moment, there are about 2,000 e-Choupals whose services are available to a million farmers in nearly 11,000 villages across four states. Each e-Choupal is operated by a local farmer who is trusted by the local population. Their computers are easy to use and allow internet access for up-to-the-minute global market prices, agricultural issues, and e-mail communication. This innovation helps to overcome significant inefficiencies of the traditional crop trading system: For example, the time farmers spend at their local market place can be reduced and the weighing of the crop can be simplified. Both sides benefit economically and socially (cf. Prahalad 2005: 319ff.).

*Economic Benefits (Farmer)*

- Better information and information timing: Real-time prices are available via the e-Choupal. Normally, if a farmer travels to a market place, an indicative price is not available before his arrival; the final price of the transaction is not known until the auction is completed, i.e. until a time at which there is no backing out of the auction. Also, the farmer can gain information about the local weather, which enables him to adjust the seed time or yield. Furthermore, he can send e-mails to address questions to ITC employees about optimising soil usage.
- No transportation costs: ITC pays a compensation fee to the farmer for the transportation of his crop to ITC's nearest collection point, which is normally closer than the next market place. Also, ITC is planning to establish collection points in a 25 mile radius of every village, which could e.g. be a location of ITC itself or a cooperating warehouse.
- Shorter transaction duration: The farmers are used to travelling long distances to the next market place. Frequently, this takes them several days and they have to be patient until they receive their payment. By contrast, selling to ITC takes an average of only a few hours.
- Weighting accuracy: The traditional manual scales on the markets are often inaccurate and can easily be manipulated. Moreover, the crop is first bagged and then the bags are weighed separately so that errors may accumulate over the entire weighing process. Weighing at ITC is impartial, as the crop is weighed in its entirety at once by an electric weighbridge.

*Social Benefits (Farmer)*

- Dignity: The farmer is treated like a customer. The provision of service conveys a feeling of respect.
- Problem solution: The farmer has a personal contact to address his particular needs and ask for specific solutions. ITC responds individually, providing him with knowledge about agricultural issues.

*Economic Benefits (ITC)*

- The e-Choupal system reduces inefficiencies: The traditional system involves several middlemen, such as commission agents who judge and buy the crop at the market and sell it afterwards to companies, or workers at the market who pack the crop and may spill some of it intentionally as they are allowed to gather such crops and sell them at the end of the day. These practices cause inefficiencies, which the e-Choupal system reduces to a minimum: ITC directly employs commission agents so that costs of intermediation can be cut and bagging is rendered unnecessary.
- Lower transportation costs: Transportation costs are reduced, due to the cutback of intermediate commission. ITC directly collects the crops from ITC collection points and pays a compensation fee to farmers, which is only half the amount they had to pay in the traditional system to self-employed commission agents.
- Increase in quality: Since farmers learn about quality differences and respective rewards, they start valuing it. Moreover, manipulation such as the blending of crops is reduced.
- Security in supplying and planning: The e-Choupals enable ITC to enter into long-term relationships to the farmers so that they gain supply security over time. The information ITC receives from the network allows to better plan out future operations.
- Having established an efficient infrastructure through e-Choupals, ITC is now able to distribute other goods and services such as fertilisers.
- Farmers can initiate innovations through the network.

*Social Benefits (ITC)*

- ITC improves its customer care.
- The organisation enjoys the reputation of being transparent and trustworthy.
- The employees feel good for supporting the farmers (feeling good by doing good).

### *5.2 Other Open Innovation Networks and Responsible Initiatives*

While there is, in fact, a rapidly growing number of Open Innovation communities, only a few of them have developed a sound responsibility-based approach. In general, two types should be

distinguished: On the one hand, there are organisations that launch their own corporate platforms, via websites such as pioneering-innovation.com (BMW AG), ideastorm.com (Dell Inc.), mystarbucksidea.force.com (Starbucks Corporation), or tchibo-ideas.de (Tchibo AG). On the other hand, a handful of open networks have emerged, primarily in the US that include crowdspirit.com, innocentive.com, ideaconnection.com, ideawicket.com, atizo.com, spigit.com, and incuby.com.

One particular example that emphasises a responsible business concept is betavine.com, a Vodafone-powered innovation network that connects people's creativity and technical knowledge. Here, users can programme applications and submit them as solutions to featured challenges. The network particularly encourages solving social challenges in developing countries via Social Exchange. The site was established in October 2009 and has successfully grown in size and membership since then. The website has already brought up some impressive solutions such as micro-lending systems, up-to-the-minute weather forecasts for local farmers, or educational films about HIV that can be circulated via mobile phones. In addition, offline initiatives experience growing popularity, too. Here, two approaches shall be more closely reviewed. Both are examples for responsible innovation.

### *INNOCOPE*

A group of German authors have developed INNOCOPE (Innovating through consumer integrated product development). The project involves a multistage workshop system and specific evaluation processes. In contrast to traditional methods of customer involvement, their concept is not limited to a one-way knowledge transfer. Real customers interact with firms' representatives from general management, R&D, marketing, and sales in a series of at least three workshops. The creators found that personal, repeated interaction is far more beneficial than the analysis of survey questionnaires. In particular, INNOCOPE facilitates discussions related to corporate responsibility such as environmental issues. The project hereby achieves sustainability as customers tend to claim long-term needs, and will also increase customer retention. With respect to innovation responsibility, INNOCOPE can be regarded as a useful tool involving personal interaction rather than digital communication. It will therefore be particularly relevant for local businesses or small segments (cf. Hoffmann et al. 2008).

*JUVI*

An Austrian business ethics organisation has launched the innovation responsibility programme JUVI ("Jugend" [Youth], "Verantwortung" [Responsibility], "Innovation" [Innovation]). It enables intensive cooperation between companies and schools on innovation topics. Outstanding pupils are invited to work at R&D departments of local companies for one week. They develop ideas and solutions, in which special attention is paid social and ecological responsibility. In particular, they focus on future generations' interests, and company representatives have been amased at the quality and thoughtfulness of pupils' ideas and continue to work on their proposals. At the same time, the pupils gain an excellent insight. With these results, the initiators experience a real win-win situation. Once again, this tool seems suitable for small segments or local cooperations.

## *6. Open Innovation Responsibility and Nokia*

### *6.1 The Foundations of an Open Innovation Responsibility Platform*

With over 4.5 million members, the Nokia Forum is a promising platform that allows customers to develop applications and distribute them via OVI store. Additionally, the Ideas Project website allows to present inventions via blogs or videos, and the Nokia Research Center is a sophisticated service for interaction with universities.[6] However, Nokia has not yet successfully implemented external crowd sourcing as a genuine paradigm of innovation, nor has it sufficiently integrated and unified its various platforms. Therefore, we recommend that Nokia include stakeholders systematically and build up user-friendly and uniform facilities for Open Innovation. We will refer to and discuss such facilities as Open Innovation Responsibility Platform (OIRP) in the following section.

The proposed tool will allow stakeholders to express their needs whilst innovators (i.e. programmers and developers from within and outside Nokia) can freely engage in the innovation process. For Nokia, OIRP will ensure well-suited innovations, greater stakeholder retention and an authentic way of fulfilling corporate responsibility. How exactly can this work?

6 For further information visit: forum.nokia.com, ideasproject.com and research.nokia.com.

The basic idea is that people from all over the world submit their demands, claims, and ideas to an online platform provided by Nokia. They start up projects open to innovators, which sets off a process of solution thinking. Projects will be open to comments and stakeholders' votes. As soon as a solution has been developed, it will be checked for malfunction and immoral content. Subsequently, it will be offered on the platform for purchase. Nokia may then decide to subsidise specific projects. In this respect, the value that stakeholders assign certain projects (i.e. through sharing the demand or submitting solutions) indicates their potential. Generally speaking, the platform will thus become an efficient, socially responsible marketplace for virtually any kind of innovation, ranging from thoughtful solutions to intelligent applications.

### *6.2 Managing the Open Innovation Responsibility Platform*

Nokia's activities will be limited to a minimum: First, Nokia provides a platform. Second, Nokia reviews the ideas and withdraws immoral content from the innovation process. Third, it guarantees that a sufficient account of stakeholders' interests is represented. Fourth, Nokia, without raising charges, provides all required source codes and offers technical support. Fifth, Nokia implements a payment scheme for external innovators with special incentives for socially relevant challenges.

These activities correspond to a number of thorough implementation policies. First, the platform must be strictly reduced to functionality: Unbureaucratic, free access, easy interaction features as well as compatibility with all Nokia devices are decisive factors for a successful platform with growth potential. Second, an integrity policy must secure that solutions do not contain immoral content. Accordingly, we advise forming a taskforce of ethic consultants, R&D experts, and corporate communications.[7] Third, we propose the establishment of a comprehensive dialogue between stakeholders. Apart from formal stakeholder conferences, local Nokia shopkeepers can be worthy cooperators, especially for BOP countries. Fourth, Nokia must not charge innovators, as barriers for innovators to OIRP must be reduced to a minimum. This also includes free access to all relevant source codes. Fifth, we propose that innovators be rewarded with a reasonable share of the profits made from their solution. Fixed sums may be combined with success-related incentives. In this respect, Nokia will receive a small share, which should, however, be reinvested in socially

7 All solutions submitted should be checked individually before Nokia offers them to its customers. Solutions must not be discriminative, racist, violent, or similarly unacceptable.

beneficial innovations in order to support the programme in the long run. Of course, these are first proposals and open for modification.

## *7. The Win-Win-Constellation of Open Innovation Responsibility*

### *7.1 The Win of Open Innovation Responsibility for the Organisation*

Entrepreneurial engagement in social responsibility will not be effective in the long run without sustainable profits. Profitability is an essential condition for any corporate responsibility concept. This is satisfied by OIR, for in contrast to traditional philanthropic conduct or donations, OIR takes corporate responsibility to a more advanced level.

As explained above (3.2), there is a large BOP market. Local growth opportunities can create an enduring spiral of demand for products and services, leading to more production and higher income, which then again leads to an increase in demand. It will be crucial to get organisations involved with these prospects. According to our model financial investors will be attracted to sustainable developing markets, as social markets, like those created via an Open Innovation Responsibility Platform, tend to be sustainable (cf. Mackey/Mackey/Barney 2007: 828). In addition, OIR will not only accelerate an organisational innovation process, but it will also ensure that solutions precisely meet actual customers' needs Moreover, with the help of a large developer community, the organisation will gain more flexibility in responding to consumers' expectations.

In order to make products accessible to BOP customers, they need to be reasonably priced and of good quality. This may be achieved through OIR because it is an efficient innovation technique to design and ameliorate products: Using people's inspiration and creativity saves internal R&D budgets. The only prices to be paid by the organisation are subsidies for responsible innovations and the costs for platform support. As a result, the organisation's reputation will be positively affected, which will strengthen customer retention.

### *7.2 The Win of Open Innovation Responsibility for Society*

51 of the 100 world's wealthiest entities are companies (cf. Anderson/Cavanagh 2000: 3). "Given bold and responsible leadership from the private sector and civil society organisations, I have no

doubt that the elimination of poverty and derivation is possible by 2020" (Prahalad 2005: 112), argues Prahalad, who holds the view that corporations have a strong impact on economic and social development. There are numerous reasons to concur with his claim.

Firstly, multinational corporations entering BOP markets often enjoy great respect. They are perceived as more reliable than local governments. In this respect, consider, for instance, the extreme corruption existing in many BOP countries such as Bangladesh, Mexico, or China (Transparency International 2009: 399-401), which makes a corporation's entering such a seemingly hostile environment appear all the more courageous and admirable.

Secondly, another remarkable improvement for BOP customers is that they receive an identity[8] and the possibility to communicate with unknown people. Participating in a global developer community widens their cultural horizon and stimulates their problem solving abilities. Furthermore, on the platform they will be listened to, with foreign people becoming more sensitive to the problems BOP customers have to face.

Thirdly, offering them a wider range of products increases their quality of life. They will gain more freedom of choice as the product variety increases. Moreover, if a wider range of products is available, special products niches are more likely to be filled. Take, for instance, goods such as those for people suffering from lactose intolerance.

Most importantly, however, BOP people see progress in their lives. They can upgrade their daily living conditions. Consider, for example, a farmer receiving up-to-date weather forecasts or information on wheat prices: he will be enabled to work more efficiently now, while raising his financial resources. He and his entire family will profit from this, increasing their quality of life.[9]

## *8. Concluding Remarks*

In this paper we have argued that organisations should open up their innovation processes to a broad stakeholder community, and have based this argument upon relevant economic and philosophical terms and concepts. In our main argument, we have shown that it is both socially responsible and

8 Many BOP customers do not even possess an electoral card or any other ID card. Giving them a nickname means a first step in creating an identity.

9 There are many more effects that could be mentioned demonstrating a corporation's influence towards development, such as emancipation issues, knowledge expansion or the reduction of corruption (cf. Prahalad 2005: 77, 105ff.).

economically beneficial to allow stakeholders to engage in innovation. In particular with regard to BOP markets, organisations have the capacity to solve severe social problems by using their core competency. At the same time, they gain market shares in rapidly expanding economies. Opening innovation allows for an efficient response to actual needs, as global innovators will complement traditional R&D activity and increase the organisation's flexibility. Thus, we have proposed a platform tool, which allows for vivid interaction between stakeholders, whilst letting the organisation act as a mediator and booster of social responsibility. We have concluded our argument with specific implementation details for Nokia and an overview of the win-win situation.

Without a doubt, truly innovative organisations inevitably face the rapidly changing business environment. However, they will be unable to cope with the speed and richness of progress unless they engage in genuine listening and collaboration. Apple's AppStore featured more than 200,000 applications in June 2010 and Google's Android Market has grown to offer some 100,000 applications within only one year from its foundation (Spehr 2010). However, none of the Open Innovation strategies has yet paid enough attention to how organisations can create alternative target markets. We have suggested the BOP as one major addressee and have explained how Nokia could engage in responsible Open Innovation. Nonetheless, OIR is not limited to developing countries or the communication sector. Its core idea could serve various other functions: accumulation of knowledge in medical treatment of widely spread diseases (e.g. HIV), improvements of product life-cycles and development of environmentally-responsible strategies (e.g. recycling and multiple usage of consumer electronics), techniques for revealing corruption, or in terms of internal application, improving organisational culture. This said, there are virtually no limits to the application of OIR. It is a promising concept, which – while it may result in quantitatively more innovations – will certainly generate qualitatively better ones which are more open and responsible.

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