Visions of Openness – The Diverse Perspectives on Openness for Designing Open Systems

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Abstract

Open Innovation, Open Source, Open Knowledge, Open Education. Since the internet enabled the emergence of more open systems, the advantages of openness found their way into areas like economy, politics, society, and technology. From software to knowledge platforms, app stores, ecosystems, communities, or political strategies. Numerous organizations and initiatives have occurred with a strong belief in open sharing, collaboration, and production. But what is actually meant when we define something as open? It turns out there exist a variety of different visions of openness. This investigation elaborates these differences and uncovers their underlying assumptions, values, beliefs, and motivations. In particular it sheds light on the various nuances of openness, and shows why the degree of openness is often a question of perspective, intention, and who defines somethings as open. The paper aims to enable a more differentiated view on openness and support a more conscious design of open systems.

Keywords: Openness, Open Source, Design Research, Vision Assessment, Open Innovation, Systems Design, Open Education

Introduction

The emergence of the internet brought many changes. One of these changes is the replacement of closed with more open systems. Many architects of the digital age promote openness as their foundational value what led to concepts like Open Innovation, Open Source, Open Knowledge, or Open Education (Russel 2014:1). From software to knowledge platforms, app stores, ecosystems, communities, or political strategies, numerous organizations and initiatives have occurred with a strong belief in open sharing, collaboration, and production (Chesbrough 2017, Curley & Salmelin 2018, Greant 2009, Jhangiani & Biswas-Diener 2017). But what is actually meant when something is described as open? The answer to this question often depends on *who* describes something as open. Technologists speak about the open development of software, economists about open platforms as a corporate strategy, and educators about the open sharing of knowledge. They all speak about openness as a core design principle, but often mean something fundamentally different. This investigation elaborates these differences and uncovers their visions of openness. Because these visions shape how and why people apply the idea of openness. Hence, the investigation aims to form a basis that supports the purposeful application of openness in the design of open systems for technological, economic, political, or educational activities.

Visions

Visions are normative imaginations of the future that represent assumptions, values, beliefs, and motivations (Neuhaus 2009:177). Visions live in the minds of people and spread through communication. They are mental constructions that are formed by past experiences that people have made in their social reality. They often represent a desirable economic, political, technological, or societal state of something at a vague point in the future. Visions like other imaginations of the future represent the future in the present. These representations are the realities in which organizations and individuals take action, make decisions, create strategies, and design products or services (:177). They significantly shape processes in the present and are helpful in multiple ways. Visions help us orientate, make decisions, and identify options for change. They are also a communication medium between people to discuss possible directions and guide us towards a more desirable state (Lösch, Heil & Schneider 2017:142). On the other side, unreflected visions can guide us towards undesirable futures. In order to make sense of their full potential they

have to be reflected and underlying assumptions have to get uncovered and critically analyzed. Visions that are shared as narratives can be a very powerful tool to organize large groups of people, since they can activate actions and behavioral changes (:142). So in order to consciously and responsibly apply the power of visions, a critical examination is inevitable.

Openness

To properly understand a concept like Open Innovation or Open Source, the term openness needs to be clarified. What do we actually mean when we describe a door, a society, or a person as open? One definition suggests that something is open when there is no enclosing or confining barrier, and when there is accessibility on all or nearly all sides without restriction to a particular group of people (Merriam-Webster 2021). But how precise is this definition of openness? Is a door open when there is a gap between the door frame and the door? Or is it open when it isn't locked and therefore accessible without a key? What if someone isn't physically able to open the door even though it isn't locked? Is it then closed for that person? When trying to define a society, a person, or a system as open the range of possible meanings of openness doesn't get smaller. As mentioned above, the meaning of openness often depends on the context and a person's understanding of openness. Thus, defining something as open or closed is mostly a question of perspective and a question of *how open* something is (Maxwell 2006:122). In order to imagine possible degrees of openness, it is important to highlight a key driver for the mentioned concepts: The internet. On the internet anyone can publish or invent something without asking anyone for permission (Mozilla 2017). The internet was designed as an open system with a high degree of openness, what created the foundation for the development of concepts like Open Innovation or Open Source. If the internet had been designed with a lower degree of openness, the development of some of these concepts would probably not have been possible. It represents a kind of framework that defines the maximum degree of openness for everything that is built on top of it. How an internet with a lower degree of openness would look like is visible in the design of many popular online service platforms that are centrally managed. The app stores of large internet companies for instance can been seen as an internet within the internet. Though, their entry barriers are significantly higher. On most of these platforms not anyone can publish or invent something. So, in comparison to *the* internet, the degree of openness on many

service platforms is often very low. Though, both systems are considered as open.

Vision of Openness for Economic Power

The vision of designed openness as a driver for economic power is mostly visible in the concept of Open Innovation. The idea of Open Innovation emerged in the beginning of the 21st century with a primer focus on individual companies and their collaboration with partners in more open ways (Chesbrough 2017:35). It can be seen as the opposite of a closed innovation model where internal research and development activities lead to internally produced products and their distribution (:35). In the concept of Open Innovation, innovation emerges by accessing, harnessing, and absorbing information flows outside of a company (:35). Until today Open Innovation has been developed further and moved from product innovation to business model and service innovation (:37). It now implies the open collaboration with communities and entire ecosystems. In numerous publications Henry Chesbrough who coined the term Open Innovation, defines two ways how information flow: outside-in and inside-out (:35-36). In the outside-in flow the innovation process is opened up for external information inflows. In the inside-out flow unused and underutilized information is let out of a company, so that others can use it for their business. This allows companies to actively sell and trade intellectual property. In comparison to concepts like Open Source, the Open Innovation approach doesn't ignore the business model of the company, instead it puts it at the center of it (:36). Thus, the degree of openness, and the inflow and outflow of information, is designed and managed to achieve the desired business goals. One of the more recent ideas in Open Innovation are service platforms. These are very tangible to understand the vision of openness for economic power. A service platform is designed to invite, inspire, and motivate customers, developers, and others to create something on top of it or join it (:37). Well known examples are the already mentioned app stores. These systems are the foundation for smartphones and all the applications and services used on them. The outside-in and inside-out flow of digital information is strategically managed and controlled by the app store provider. Which apps are available? Who can publish an app? Under which conditions can an app be published? Which user sees and therefore uses which app? It's all based on the economic needs of the app store provider. When a service platform is designed in an open way, the activities of the

contributors ideally increase the value of the business (:37), which makes the idea of open platforms very representative for the vision of openness for economic power.

Vision of Openness for Political Governance

The vision of designed openness for political governance is mostly driven by the concept of Open Innovation 2.0. In contrast to Open Innovation it takes on a more systemic and overarching perspective that is rather focused on organizing political innovations instead of private companies and their product and service innovations. Open Innovation 2.0 blurs the boundaries between universities, industries, governments, and societal actors as innovators (Curley & Salmelin 2018:3). The inventors of Open Innovation 2.0 claim that by rapidly exchanging information within digital platforms and ecosystems, solutions are scalable system-wide and due to a network effect these solutions can get adopted rapidly (:50-51). Open Innovation 2.0 is based on the principles and values of collaboration and co-creation, and the believe that innovation is more successful when its practiced by many (:1). To enable this kind of innovation the platforms and ecosystems that connect people have to be open. The design and management of these innovation communities are the main tasks of governments that are interested in following the vision of openness for political governance. But just having open ecosystems and platforms might not be enough. Openness in political governance also means that every citizen develops the courage to be open for innovation (:129). To uncover the new and adapt to the new quickly. The formation of such kind of society is a complex task as it requires collective beliefs and assumptions, a culture, that is open for change (:129). Thus, the vision of openness for political governance consists of two future states: The development of open platforms and ecosystems for rapid collaboration, and the design of cultural openness.

Vision of Openness for Technological Progress

The vision of designed openness for technological progress can be identified in the concept and culture of Open Source. Most often the concept of Open Source relates to the development of software. In software development openness means that everyone can freely run, study, modify, and share a program, and use it in commercial and non-commercial ways (Greant 2009:70). This definition of openness guarantees that everyone can look at the

source code to figure out how something works, improve individual development skills, and ensure that a program does what it pretends to do (:70). By having the possibility to modify and the right to share, a program can be made more useful for oneself and others (:70). Often there is a lack of clarity or even a conflict when it comes to the idea of Free Software and Open Source Software. There are a lot of overlays, but the main difference is that Free Software is an ethical movement that puts the values of software freedom over technological progress (:71-72). Open Source in comparison is about sharing human innovation for various reasons, but mostly for the development of more progressive technologies, educational purposes, and the self-determination of developers (:72). Though, many projects that share the values of free software operate under the title Open Source, or Free and Open Source. Most contributors work on Open Source projects for their personal benefit and the benefit of the community at large (Booth 2010:9). Many of them share the opinion that Open Source software development is the best way to develop software (:21). Many developers get satisfied by sharing their work openly or solving a problem, just as other creators get excited by producing a drawing, a writing, a poem, or a piece of music (:139). Many of these creators never offer their work for sale and instead publish it for others to enjoy, reflect, and discuss (:139). No matter if it is a piece of software, a painting, or a poem, the open sharing of work aims to contribute to the human advancement towards more desired futures, what represents the essence of the vision of openness for technological progress.

Vision of Openness for Social Equality

The vision of designed openness for social equality is mostly observable in the concept of Open Knowledge and Open Education. The production and distribution of knowledge has always defined the possibilities of humans (Jhangiani & Biswas-Diener 2017:3). Among other things, education is probably one of the most powerful human inventions as it ensures that knowledge passes from one person to another (:3). This often happens behind closed doors what lead to wide-spread exclusion and power inequalities (:4-5). Open Knowledge and Education approaches aim to fix this. Advocates argue that in order to fight education inequality, knowledge has to be open and accessible, so that everyone has the possibility to participate in education. With the internet as an open system such widespread distribution of digitized knowledge is theoretical possible (Maxwell 2006:123). Openness of

knowledge means that everyone can freely access knowledge regardless of aspects like the ability to pay or location (Jhangiani & Biswas-Diener 2017:148). This kind of openness aims to enable the independence of individuals from threats of arbitrary power and centralized control (Russel 2014:2). If knowledge is power, then Open Knowledge and Education is the distribution of power to individuals. Openness is therefore a vision that drives developments towards this belief.

Conclusion

All these concepts contain the word open and, on the basis of the prior defined term openness, are open to a higher or lower degree. The visions of these concepts represent the interests of the people that developed them. That means that the degree of openness is designed in regard to these interests and goals. The vision of openness for economic power contains the acceleration logic of a capitalist economic system and is open for everyone who could be beneficial for business activities. The vision of openness for political governance expands this idea and envisions a political system that innovates through open societal structures. It represents an idea of governance that is open when it generates political innovations that could help political leaders to deal with complex challenges. In comparison to these ideas the vision of openness for technological progress isn't about the centralized design and management of openness, instead openness serves the needs of technologists and enables accessibility for everyone with skills in software development.

Though, the only one of the visions discussed that has a relatively high degree of openness is the vision of openness for social equality. In contrast to the other visions, this one is based on the assumption that a more equitable society is only possible, if openness means that something is open for everyone without barriers, specific conditions, skills, or any form of centralized control.

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