

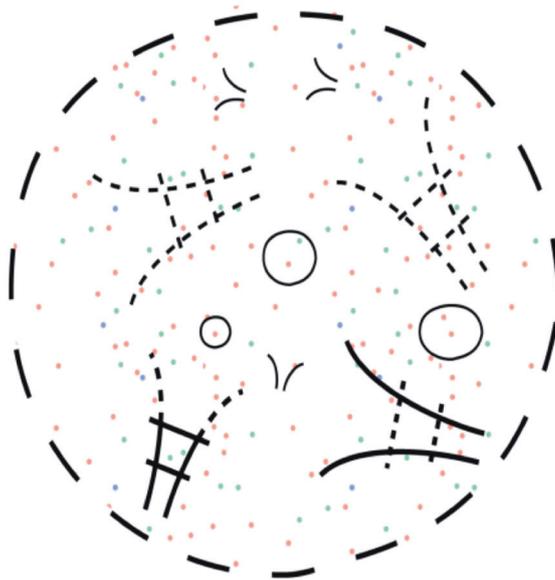
Open Innovation 2.0: A New Paradigm

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Abstract

The challenges we face in Europe and beyond are too large to tackle in isolation and thus we need a new approach. Better solutions are needed globally in domains such as healthcare, transportation, climate change, youth unemployment, financial stability, prosperity, sustainability, and growth. These challenges provide a significant opportunity to create new shared value through innovation. Society's challenges may well reflect the transition to innovative solutions, and today's challenges are perhaps best seen as examples of Joseph

Schumpeter's (1942) creative destruction model where the failure of old approaches fuels the motivation for change and shapes the future. The challenges also call attention to the quadruple helix model of innovation where civil society joins with business, academia, and government sectors to drive changes far beyond the scope of what any one organization can do on their own. To do so will require us to re-double our drive to experiment. Our destination is a new model for innovation, Open Innovation 2.0.

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1. Open Innovation 2.0

Innovation matters. According to the US department of Commerce, technological innovation accounted for 75% of GDP growth in the USA since the end of World War II. (Ezell & Atkinson 2010) In parallel, innovation itself is changing faster than a speeding bullet and through our monitoring of innovation best practices, we observe a new paradigm emerging. The Open Innovation Strategy and Policy Group (OISPG) has published 10 substantive reports on different aspects of a new innovation paradigm and this informs us that something different is happening. We believe that the intersection of mega-trends such as digitization, mass collaboration, and sustainability needs is creating a unique opportunity to enable an explosive increase in shared value due to innovation.

Open Innovation 2.0 (OI2) is a new paradigm based on principles of integrated collaboration, co-created shared value, cultivated innovation ecosystems, unleashed exponential technologies, and extraordinarily rapid adoption. We believe that innovation can be a discipline practiced by many, rather than an art mastered by few.

The probability of break-away improvements increases as a function of diverse multidisciplinary experimentation, which is the essence of OI2. In today's complex world, experiments simply cannot be conducted in isolation. Collaborative research will accelerate the innovative process and improve the quality of its outcomes. While closed-world innovation will not disappear, it will be dwarfed by the efforts of teams that enable a wide spectrum of stakeholders to take on active roles.

The adoption of the new OI2 paradigm will be the catalyst that unleashes a virtual Cambrian explosion of innovation in Europe. Instead of gravitating to the lowest common denominator of its society, Europeans will deliver to the highest common multiple by leveraging all the talents and resources of European society. OI2 is all about an openness to innovation that does not resist change, but embraces it. OI2 requires a new mindset focused on teams, collaboration, and sharing. Only with this focus will it be possible to tear down the walls that form separate silos of civil, academic, business, and government innovation. Silos will be replaced with creative commons, shared societal capital, and the systematic harvesting of experimental results. Information technology will play a special role because IT can supply the necessary connectivity and enable social networking among innovators and the communities they serve.

There is much that needs to be done to properly establish OI2 in Europe. This is why policy makers must make serious efforts to strengthen the framework supporting open innovation approaches.

As one example, the work of the European Institute of Innovation and Technology (EIT) is a step in the right direction. There is significant opportunity for growth based on Europe's strong hubs and regions that garner high scores on measures of innovation, including competitiveness and other Information Communication Technology (ICT) maturity indices.

It is important to note that Europe is traditionally stronger in research output and weaker in innovation take-up (i.e., adoption). To improve adoption rates, the new EU Horizon 2020 programme stresses a more holistic perspective for Research, Development, and Innovation (RD&I) and this is another step in the right direction. This programme should encourage more Europeans to take measured risks and reap the benefits of new higher-expectation businesses.

1.1 Academic Perspectives on Open Innovation 2.0

Central to the success of OI2 is the concept of shared value and shared vision. Michael Porter and Mark Kramer (2011) have espoused the idea of shared value where companies shift from optimizing short-term financial performance to optimizing both corporate performance and social conditions, that is, increasing the value shared by both the corporation and the society in which it is embedded. The thinking of Porter and Kramer has profound implications on how to attack the challenges that Europe is facing. OI2 is a paradigm that is also concerned with the creation of shared value, sustainable prosperity, and improvements in human well-being. Many people recognize that innovation is not just an imperative for economic and social progress. Rather, it is a composite of mindset, art, skill, and societal capability that underpins the survival and progress of the human species. Hence it is key that OI2 aims to enhance simultaneous value creation for civil, business, academia, and government markets.

MIT's Michael Schrage commented that "Innovation is not innovators innovating, but customers adopting." This statement perfectly characterizes the shift in mindset that is a hallmark of OI2. In an interview about innovation, Schrage went on to say, "The real story of American innovation is [about] the folks who adopted inventions and thereby transformed them from mere inventions to full-scale innovations." (Schrage 2004) Innovation happens when a customer becomes a co-creator of value, an active subject of the innovation process, and is not merely a passive object. In Schrage's terms, invention + adoption = innovation.

1.2 Industrial Perspective on Open Innovation 2.0

With advances in global information and communications technologies, the processes and practices of innovation are evolving at an increasingly rapid pace. As shown in Figure 1, innovation as a discipline has moved from being something invented by a brilliant researcher, through the era of open innovation, and now to an ecosystem-centric view of innovation, where the ecosystem is often the distinguishing unit of success, not individual companies or universities.

Justin Rattner, Intel CTO has evangelized the concept of 21st century industrial research which will be characterized by visioning, inventing, validating and venturing. Instead

of innovation being driven a brilliant individual researcher, innovation success will be driven by teams of boundary spanners that possess multidisciplinary skills. In addition, methodologies such as the Intel Labs Joint Pathfinding process, create mechanisms that are able to span the so-called valley of death that lies between research and product adoption and thus enable much higher returns on research investments. Joint Pathfinding occurs where research laboratories and business groups share resources, risks, and decisions jointly. The eclectic team works together to build product roadmaps that identify the pathways from research to results.

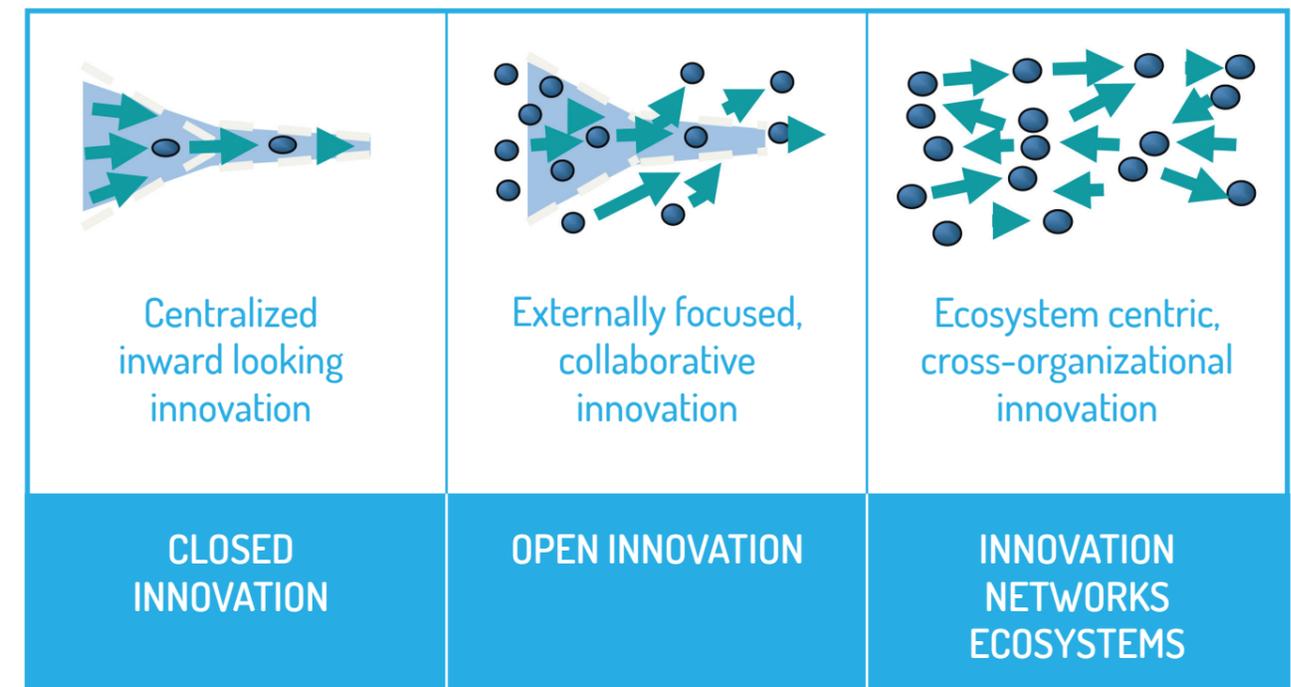


Figure 1: The Evolution of Innovation

Source: EU Open Innovation Strategy and Policy Group, 2013

1.3 Government Perspectives on Open Innovation 2.0

The political mindset about innovation is changing worldwide. In particular, a primary tenet of OI2, that successful innovation is accelerated when a wider spectrum of stakeholders participates, is heard more frequently from world leaders, as the following comments reveal.

- In his 2013 State of the Union speech, US President Barack Obama said "Innovation does not just change our lives, it is how we make a living." When speaking at the opening of a newly expanded innovation facility in May of 2013, Obama added, "We are seeing the pooling of research, of risk, and the potential for breakthroughs in manufacturing technology that only happen when we bring everyone together. No company alone would have the incentive to [make this investment] on its own, but together companies are willing to move forward." (Robinson 2013)
- Maire Geoghegan Quinn, EU Commissioner for Research, Innovation, and Science, has articulated the necessity of a continuum model for innovation. In a 2011 interview Geoghegan Quinn said, "To transform research into genuine innovation and to strengthen the whole chain from research to retail, a close working relationship with other Commissioners, with Member States, with research institutions, and with business will be necessary."
- UK Chancellor of the Exchequer George Osborne recently warned "Innovation is not a sausage machine." In a 2012 interview, he went on to say, "You don't get [innovation] by a plan imposed by government and you can't measure it just by counting patents or even just spend on R&D. It is all about creative interactions between science and business. You get innovation when great universities, leading-edge science, world-class companies, and entrepreneurial start-ups come together."

At last, in the Western economies, there is recognition that a long-term view is needed. As stated in the Obama Administration's Strategy for American Innovation, "A short-term view of the economy masks under-investments in essential drivers of sustainable, broadly-shared growth. It promotes temporary fixes over lasting solutions. This is patently clear when looking at how education, infrastructure, healthcare, energy, and research – all pillars of lasting prosperity – were ignored during the last bubble." (2009)

Political perspectives like these will help ensure that the right policy decisions are made to accelerate the creation of both business and societal value through innovation. The role of the public sector is to create the environments for OI2 where

the mash-up of the needed components can happen in a frictionless environment. The public sector provides not only the framework but also brings in the fuel for the innovation processes, for example, by procuring innovative products and sharing RD&I risk. It is also important to create efficient political and legal environments to catalyse innovation and experimentation.

1.4 Citizen / User Perspective on Open Innovation 2.0

Open Innovation 2.0 is a paradigm buster for citizens and users. Instead of the user or citizen being seen as a research object and innovation "being done" to the citizen, the citizen and user becomes an integral part of the innovation process.

Innovation can be defined as the "adoption of something new which creates value for the individual or organization that adopts it" (Baldwin and Curley, 2007) so it is the user or citizen who is often at the fulcrum of where value gets realized from an innovation. Who better to determine what value an innovation should deliver than an intended user.

Over the last decade Innovation itself has moved from different phases from open innovation through networked innovation and now to participative innovation, which is an integral characteristic of Open innovation 2.0. Later in this paper we will discuss the reverse innovation pyramid (figure 2) which describes how users/citizens co-create and share value.

The European Internet Foundation's seminal report on our Digital World in 2025 (Linton, 2009) identified mass collaboration as the dominant mega trend. With the continued dramatic expansion of connectivity and social media we are likely to witness mass collaboration on a scale never seen before. As connectivity and awareness builds more and more individuals will aspire to become high expectations entrepreneurs (Curley & Formica, 2013) and will attach themselves to fast moving and growing innovation ecosystems.

Ordinary citizens now seem also much more "open to innovation". Ninety two percent of Dublin citizens surveyed at the OI2 conference showcase said they would like to see new technologies tested in Dublin City and would like to be part of the experiments. This propensity to embrace and help shape change is a huge asset to be harnessed. The Citywatch application jointly developed by Intel Labs Europe and Trinity College Dublin is an example of a platform which aims to leverage and build on the collaborative intelligence of all the citizens of Dublin.

User experience is also a new driver for innovation. Instead of focussing on a product or services features, developers who focus on the user experience are likely to be most successful.

Paying attention to the user experience of an innovation can be really crucial in ensuring a thrilled user can influence further adoption by spreading the word.

2. Open Innovation 2.0 in Detail

In the last decade, Henry Chesbrough (2003) creatively conceptualized the idea of open innovation where ideas pass to and from different organizations for exploitation. Today, innovation success is characterized by how well innovation ecosystems assembled from a multitude of participants create novel products and services that are quickly adopted. Once again we want to stress the importance of the creativity beyond organisational boundaries as essential to creating valuable components for innovation from a societal (market) perspective due to new co-creation processes across all stakeholders.

The EU's Open Innovation Strategy and Policy Group (OISPG) unites industrial groups, academia, governments, and private individuals to support policies for open innovation at the European Commission. OISPG has published annual yearbooks that document and summarize current innovation practices in Europe. In past years we are witnessing a new level of open-ness with increased sophistication and complexity associated with innovation.

OI2 is the second significant paradigm shift (Kuhn 1962) in the recent history of thought about innovation. Everett Rogers (1962) set the stage with his insights into the diffusion of innovation leading to adoption. Approximately forty years later, the paradigm shifted to Chesbrough's (2003) first-generation description of Open Innovation. And now, just ten years later, the paradigm is shifting again to Open Innovation 2.0. This is consistent with Kurzweil's (1999) law of accelerating returns, which predicts that paradigm shifts will occur more rapidly, especially in technology domains.

2.1 The OI2 Paradigm

For OISPG, the OI2 paradigm is an innovation model based on extensive networking and co-creative collaboration between all actors in society, spanning organizational boundaries well beyond normal licensing and collaboration schemes. With OI2, sharing and the co-generation of innovation options will enable a significant competitive advantage and will help achieve broader scale innovation benefits for larger numbers of stakeholders. In OI2 there is also a cultural shift away from resisting change and toward innovation and the creation of shared value.

Telecommunication networks deployed in the service of increased social interaction is a key characteristic of the OI2

paradigm. When communication bandwidth increases, trust builds quickly among collaborators. According to Karl-Erik Sveiby, greater bandwidth and accelerated trust lead to the creation of more innovative options as more shared ideas are activated. As George Dilder (1993) observed when analysing the power of Robert Metcalfe's Ethernet design, the value of telecommunication networks grows as an exponential function of the number of intercommunicating nodes. (Shapiro & Varian 1999, p. 184) Recent experiments such as the creation of wikis demonstrate how powerful communication networks can be when enabling large groups of individuals to collaborate.

A second core characteristic of the OI2 paradigm is use of the quadruple helix model where government, industry, academia and civil participants work together to co-create the future and drive structural changes far beyond the scope of what any one organization or person could do alone. This quadruple helix innovation approach is most successful when there is a shared vision and shared value is created.

2.2 OI2 By Example

In the accompanying 2013 OISPG Open Innovation Yearbook we identify key examples of open innovation that help illuminate the new paradigm which leverage diverse concepts and practices including the principle of shared value, open innovation, co-creation, entrepreneurial experimentation, and triple / quadruple helix innovation. We believe that the effective collaboration of government, academia, industry and civil individuals working together can drive structural changes and improvements far beyond the scope of what any one entity can achieve on its own.

Our observations indicate that we are indeed witnessing a strategic inflection point in the practice and impact of innovation. OI2 is enabled by the collision of three mega trends digitization, mass collaboration, and sustainability. Across the world, Moore's law is colliding with virtually every domain. Industries that have taken centuries to mature have been dramatically reshaped in less than a decade (e.g. music, books). Many more industries are ready for this atoms-to-bits transformation with energy distribution and the emergence of smart electrical grids as prime examples.

As IO2 evolves, its goal will be to help practitioners and academics achieve results that are more probable, predictable, and profitable. OI2 in real-world settings will increase the velocity and success rate of innovation due to its co-creative and experimental nature. While Neils Bohr cautioned, in good humour, "Prediction is difficult, especially about the future," we can apply OI2 to increase the probability of making significantly better choices, thus creating profitable new markets as a consequence.

2.3 OI2 Semantics

The three key words that define innovation are newness (or novelty), adoption, and value. An idea of course does not have to be completely new, just new to a user, organization, focus area, or society. Indeed, many successful innovations are adaptations of existing ideas, products or services which are already adopted and successful in some other sphere. Innovation is also about value creation and unless value is sustained innovations will fall away. ISPI founder Knut Holt (1978) said, "Innovation is the fusion of a user need and a technological opportunity. Ultimately there is only successful innovation when a user, organization and society perceives and receives value." OI2 promotes the role of the user to be an active participant in the innovative process from the very beginning and to continue throughout the process. (Curley 2013)

Building on the innovation value chain concept as defined by Hansen and Birkinshaw (2007), we can describe the process of innovation as going through three phases: idea generation, idea development, and the diffusion of developed concepts. (Recall that diffusion was Roger's term for the process leading to adoption.) Most innovations fail in the diffusion or adoption phase. A recent Doblin study found that the average success rates of innovation, that is, the proportion of all new and developed ideas that are adopted, is around 6%. Paradoxically most of the European funding supports are targeted at the

idea generation and exploration phase whilst the hardest part of innovation is the adoption phase.

Of crucial importance in OI2 is the idea of full spectrum innovation and Doblin's taxonomy of 10 types of innovation is a powerful framework for describing this. (Keeley et al. 2013) Whilst much of innovation efforts are focused on inventing and improving product features or performance, Doblin's research showed that often the highest returns from innovation come from business model innovation, ecosystem orchestration, user experience innovation, and brand innovation.

User-driven innovation is a crucial part of the OI2 paradigm and is also a key lever for adoption because users co-create solutions that meet their needs. Jean Claude Burgelman from European Commission correctly identified that the user has moved from being an object of research in the innovation process, to being a contributor, and on to being a co-creator of the innovative outcome. The innovation process is being turned on its head and the OISPG report on the socio-economic impact of open service innovation has conceptualized this as the reverse innovation pyramid shown in **Figure 2**. Rather than innovation being something that is done for a user, the user co-participates in the innovation process as well as profiting from its outcome. Apple's App Store is a great contemporary example of reverse innovation.

Another key concept for creating successful innovations and accelerating their adoption, particularly for complex solutions, is a **design pattern**. A derivative of research in architecture and city planning (Alexander 1977), a design pattern is a generally reusable solution to a commonly reoccurring problem. As we moved towards an increasingly interconnected and complex world, the use of design patterns will significantly help accelerate both the creation and adoption of innovations. For example, innovation of health care delivery systems will likely take the form of a constellation of improvements (i.e., a design pattern) and not the adoption of a singular product or service.

Venkatram Ramaswamy is a key evangelist of the idea of co-creation and central to his paradigm is the concept of **engagement platforms**. By co-creation, Ramaswamy means the design and development of innovative products and services where producers and consumers both participate. An engagement platform is the place where people and their environment join so that co-creation can begin. An engagement platform can be as concrete as a brick-and-mortar research facility, as abstract as a social networking site, or be an admixture of both. There must be a leader who is much like a theatrical producer. The leader's responsibilities are to select the right cast of co-creators, design the right settings and scenery, and orchestrate successful performances. The Knowledge and Innovation Communities (KICs) supported by the European Institute of Innovation and Technology are good examples of engagement platforms. The ICT KICs have developed a catalyst-carrier model to help accelerate traversing the path from research to retail.

The Living Labs was created in 2006 by the European Commission and the Finnish EU Presidency as an innovation ecosystem. Since founded as a modest start-up, the Living Labs has developed into a network of regional innovation ecosystems on all continents. Today the network comprises more than 300 sites. It is imperative for the Living Labs to create attractive innovation ecosystems following the quadruple helix innovation model (i.e., including the user), where the innovation trials and scale-up can happen more successfully due to strong engagement of the citizens in the regions. Living Labs can be seen as one example of the open innovation ecosystem development beyond traditional test beds that have usually been technology driven.

The landscape of industrial research is also changing. Following P&G's success with its Connect+Develop open innovation strategy (www.pgconnectdevelop.com), many companies are improving their innovation processes and systems. The Connect+Develop initiative, now ten years old, broadcasts P&G's needs for innovation—open problems that the company wants to solve—to a global audience of innovators. Innovators

are encouraged to propose solutions and participate in the development process. Over the decade P&G has developed over 2,000 partnerships and fielded a multitude of products the company calls **game changers**.

Frans Johansson (2006) has written extensively about what he has branded the **DeMedici Effect**, where intersectional innovation (i.e., innovation that spans disciplines and cultures) generates high yield and breakthrough results. Innovation is often about creating novel intelligent combinations of existing solutions and emerging technologies to perform tasks better, faster, and cheaper or to enable previously impossible tasks to be performed. Often an idea that works in one sector can span a boundary and be successfully adapted to generate new value in another sector.

Through improved and more extensive networking, OI2 focuses on creating increased social capital, enabling broader boundary spanning and the creation of new activation triggers for innovation options.

Cultivating and orchestrating innovation ecosystems are important parts of OI2. It is increasingly clear to us that innovation ecosystems can be created and transformed by creating a shared vision and reinforcing the vision with active social network management and orchestration. (Russell et al, 2011) Russell et al describe innovation ecosystems as "the interorganizational, political, economic, environmental, and technological systems of innovation through which a milieu conducive to business growth is catalysed, sustained and supported." Again quoting George Osborne, UK Chancellor, "You get innovation when great universities, leading-edge science, world-class companies, and entrepreneurial start-ups come together. Where they cluster together you get some of the most exciting places on the planet. That is where you find the creative ferment which drives a modern dynamic economy."

From OI2 perspective we need to go beyond the rather monolithic cluster thinking to multidisciplinary ecosystems, incorporating a unique asset that Europe has, the most advanced and demanding users of the ideation and innovation processes. In this case, users are academics, industrialists, members of government, and the citizens themselves.

In parallel, the importance of high-expectation entrepreneurs (HEEs) is ever increasing. High-expectation entrepreneurship occurs when disruptive technologies meet high ambition, creativity and hard work. HEE is especially important as according to a report from the Global Entrepreneurship Monitor, HEE's contribute about 80% of all new jobs created.

When HEE's attach themselves to fast moving ecosystems, accelerated performance and expansion of the ecosystem occur.

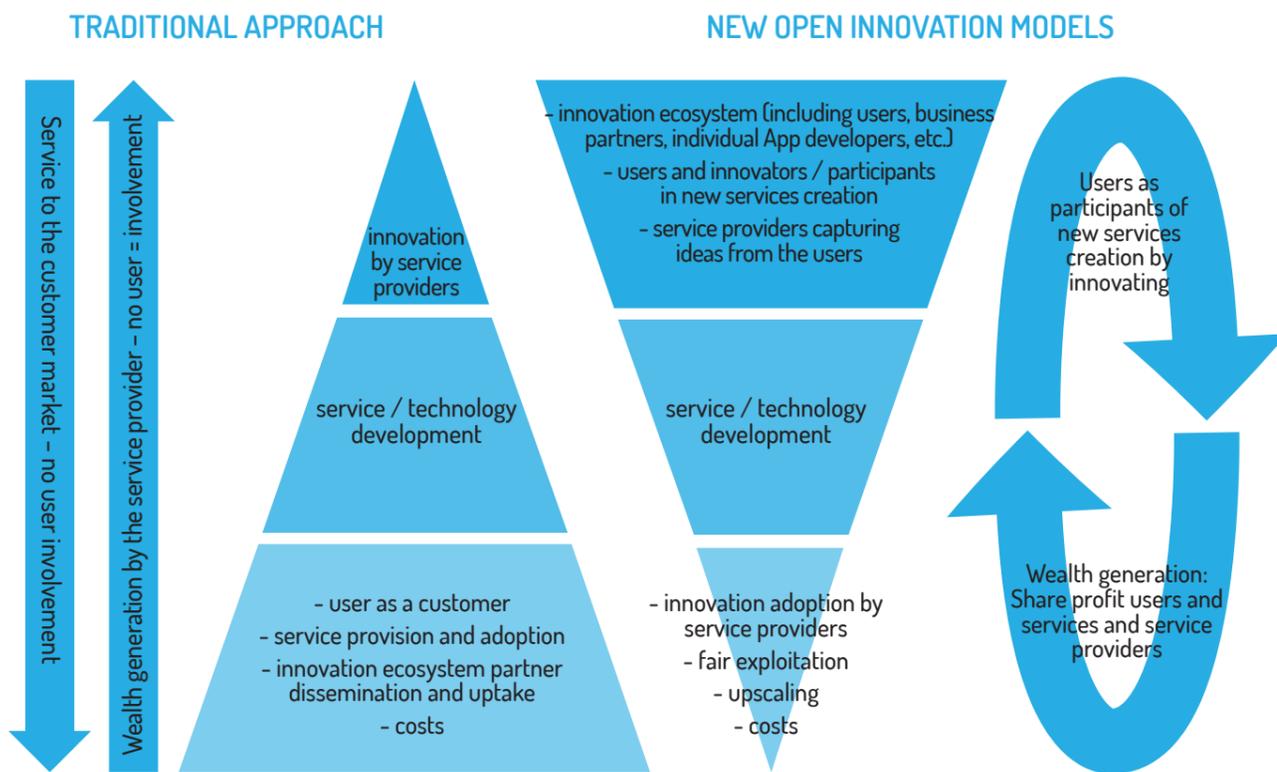


Figure 2: Reverse Innovation Pyramid

Source: EU Open Innovation Strategy and Policy Group, 2013

The European Union's introduction of the European Innovation Scoreboard (2012) gives a way of measuring the relative performance year-over-year of national innovation ecosystems and identifying constraints areas where improvements need to be made to drive improved national performance. This is a critical tool for measurement and management of national innovation systems and should be broadly adopted.

The field of Open Innovation 2.0 is constantly evolving and in **Appendix A** we list twenty snapshots of this rapidly expanding discipline. There are, of course, other snapshots today and even more in the months and years to come. Open innovation will require a new type of accompanying research capable of observing brief learning cycles for new management practices and fast sharing of learnings across Europe.

Conclusion

Open innovation 2.0 is not the panacea, but it adds an essential component to the traditional innovation approaches and it accelerates collective learning (i.e., as a tide lifts all boats) and value creation.

By harnessing these dimensions and by using the collective and collaborative potential of people in Europe and beyond, we can create a brighter more sustainable future. With the emergence of the Open Innovation 2.0 paradigm, there is a new opportunity for an entrepreneurial renaissance. To paraphrase Alan Kay, "The best way to predict the future is to innovate it." Let's go make it happen.

Open Innovation 2.0, the next winner!

Appendix A: Twenty Snapshots of Open Innovation 2.0

David Teece, professor of global business at the University of California, Berkeley, Haas School of Business, recently said that innovation is changing so rapidly that no study can aim

to comprehensively describe it. In the spirit of his remarks, we present in appendix to this article, twenty snapshots, shown in **Figure 3**, on aspects of OI2 that describe its near-term trajectory.

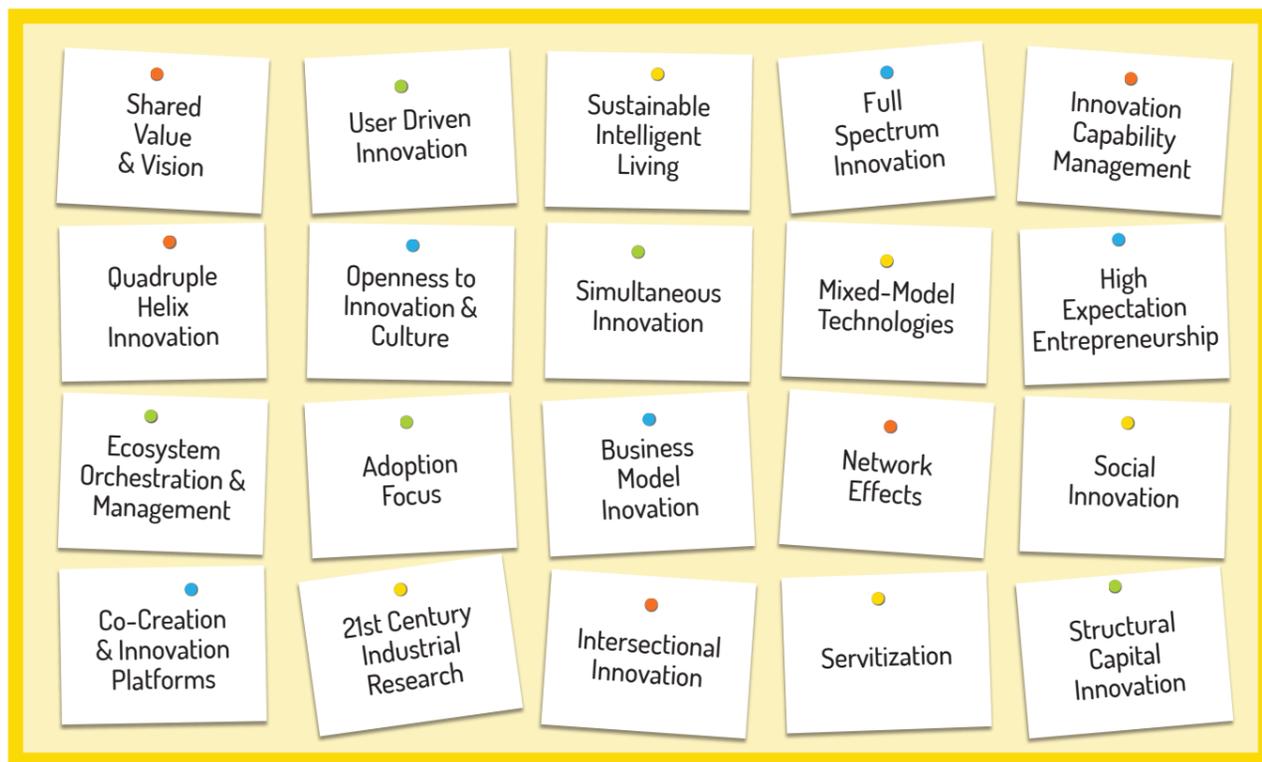


Figure 3: Twenty Snapshots of Open Innovation 2.0

Source: EU Open Innovation Strategy and Policy Group, 2013

#1: Shared Value and Vision	Shared value is the value created at the intersection of corporate performance and society when big problems are solved. Shared value is best achieved in the context of a shared vision.
#2: Quadruple Helix Innovation	Industry, government, academia, and citizens work together to co-create and drive structural changes far beyond the scope of what organizations can do on their own. There is much deeper networking among all participants, including societal capital, creative commons, and communities.
#3: Innovation Ecosystem Orchestration and Management	Innovation has moved out of the lab and into an ecosystem that crosses organizational boundaries. Innovation networks are the driving force. An innovation network is an informal or formal grouping based on trust, shared resources, shared vision, and shared value. Ecosystems are most effective when they are explicitly orchestrated and managed.
#4: Innovation Co-creation and Engagement Platforms	Co-creation includes all stakeholders, including citizens, users, or customers, in the development of innovative solutions. An engagement platform provides the necessary environment, including people and resources, for co-creation.
#5: User Involvement, User Centricity, User Experience	The role of the user has changed from being a research object, to being a research contributor, and on to being a co-innovator. The locus of innovation has shifted from guessing about product and service features users may want to user experience design to guarantee that features are desirable.
#6: Openness to Innovation	Society's posture is attuned toward embracing innovation. At the heart of this openness is a culture that embraces the entirety of socially-transmitted behaviour, norms, patterns, etc.
#7: Focus on Adoption	Schrage: "Innovation is not innovators innovating, it is customers adopting." In OI2 there is purposeful effort focused on driving adoption of innovations.
#8: 21st Century Industrial Research	21st century industrial research is characterized by visioning, inventing, validating and venturing. Successful innovation initiatives will be led by teams of boundary spanners that possess multidisciplinary skills.
#9: Sustainable Intelligent Living	Beyond designing for user experience, OI2 defines innovation as co-creation of services and solutions which add value, improve resource efficiencies, and collectively create a trajectory towards sustainability.
#10: Simultaneous Technical and Societal Innovation	In OI2 there is simultaneous technical and societal innovation with changes affecting technologies, business cases, organizations, business processes, and all of society.
#11: Business Model Innovation	Business model innovation is about defining and designing new models for capturing business value. Osterwalder & Pigneur's (2010) business model canvas is a good tool for visualizing and prototyping business models and incorporates techniques such as visual thinking, design thinking, patterns, and platforms.
#12: Intersectional Innovation	Breakthrough insights occur at the intersection of fields, disciplines and cultures, according to Frans Johansson. His book, The Medici Effect, provides numerous examples. (2006) Current activities can be found at www.themedicigroup.com .

#13: Full-Spectrum Innovation	Doblin's taxonomy, the 10 Types of Innovation, is a powerful framework for describing a full spectrum. Doblin's research showed that often the highest returns from innovation come from business model innovation, ecosystem orchestration, user experience innovation and brand innovation. (Keeley et al. 2013)
#14: Innovation Approaches Using Mixed Models	OI2 encourages an appropriate mix of disruptive, modular, incremental and architectural innovation approaches to maximize the impact of innovation. Key approaches include prototyping, experimentation, and living labs
#15: Servitization	Servitization is the delivery of a service component as an added value when providing products. This is an alternative to maximizing the adoption of products. The strategy generates sustainable revenues through annuities and helps optimize asset utilization and longevity.
#16: Network effects	In OI2 we focus on designing for network effects where new users, players or transactions reinforce existing activities. Network effects accelerate growth in the number of users and in value creation. Networking is a socioeconomic process where people interact and share information to recognize, create and act upon business opportunities
#17: Management of Innovation as a Process or Capability	OI2 recommends explicitly setting up management systems for innovation and systematically improving innovation capability in individual organizations as well as across members of innovative ecosystems.
#18: High-Expectation Entrepreneurship	High-expectation entrepreneurship is the intersection of high ambition and disruptive technology to create growth businesses. High expectation entrepreneurs (HEE's) expect to employ 20 employees or more within five years and are a primary source of job creation.
#19: Social Innovation	Mulgan et al (2007) define social innovation as "Innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organisations whose primary purposes are social."
#20: Intellectual and Structural Capital	Intellectual capital is collective knowledge, whether tacit or explicit, in an organization or society that can be used to amplify the output of other assets, create wealth (both business and societal), and help achieve competitive advantage. Structural capital is complimentary to intellectual capital and is often codified in an organization's processes and capabilities and is built as a firm or ecosystem evolves.

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