Innovation for Growth – i4g
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The notion of inclusive innovation

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**Findings**

- Various approaches of inclusive innovations (In-In) originally practiced by developing countries (frugal innovation, jugaad innovation in India) are assessed on their impact on and relevance for advanced economies.

- Inclusive innovation introduces a paradigm change – More performance is produced with Less resources for Many people (MLM).

- New business models of western companies for the large pro-poor market in developing countries should be envisaged.

- As inclusive innovation addresses social economy aspects in the developing world as well as in poorer regions of Europe or for poorer population groups policies should open up to new approaches and respond quicker to In-In initiatives.

- Market failures particular in the health sector (malaria, aids, etc.) for poorer population segments may be compensated by public research subsidies, public prizes or public procurement.

- Experimentation and piloting regarding the support for inclusive innovation to mitigating unemployment problems, in particular of the young, highly educated people is suggested.

This report does not necessarily reflect the views of the European Commission. The findings are based on a number of previous presentations and a dedicated i4g workshop.
Policy note on the notion of inclusive innovation

The paper aims to highlight the features of novel approaches to innovation that recently emerged in developing countries and pertain to inclusivity of innovation of deprived populations. Due to different terms used to denote these phenomena their understanding is somewhat ambiguous and blurs the discussion about the distinctive characteristics of various approaches and their relevance for innovation in the advanced economies.

1. In search of a definition of inclusive innovation (ININ)

While the conventional approaches to innovation consider it as a key driver of growth that in the long run also improves welfare it needs to be acknowledged that innovation may as well lead to the exclusion of parts of the population from the benefits of innovation. This is illustrated by substantial imbalances between economic and social gains from technological innovation in the majority of advanced economies questioning the inclusiveness of innovation\(^1\). The concept of inclusive innovation (ININ) emerged in developing countries where the poverty of large part of the population causes their exclusion not only from the benefits of technological advancement but also from the satisfaction of their basic needs (e.g. access to water, health care, etc.). ININ presents an attempt to enable affordable access to goods and services for large masses of the poor population via innovation. The discussion on the relation between innovation and inclusive development attracts increasing attention in academia, business, national and international institutions dealing with development issues. OECD points out that innovation relates to inequality in three ways: a) through direct impact on income distribution (innovation favors highly skilled and risk takers); b) as solutions for improving the welfare of lower and middle income groups (frugal innovation); c) through innovations by lower income groups themselves (grassroot activities) (OECD, 2013).

Several definitions of ININ have been proposed, among others the following:

- **Inclusive innovation refers to innovation that includes groups of people that are generally excluded from it. The group is generally the lowest income group, although it could also refer to gender, age groups, regions, ethnicities, industries, and so on.** Inclusivity in the innovation can mean being involved as an actor in the innovation, being considered as relevant for the innovation, being involved in the adoption of innovation and simply benefiting directly or indirectly from the innovation (see Foster and Heeks, 2013).

- **According to Global Research Alliance ‘Inclusive Innovation’ refers to the knowledge creation, acquisition, absorption and distribution efforts targeted directly at meeting the needs of the low-income or the base-of-the-pyramid (BoP) population.** The focus of Inclusive Innovation is on delivering high performance products and services or high experience at ultra-low cost to the people whose needs are generally not addressed.”\(^2\)

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\(^1\) In most OECD economies and many emerging economies the gap between rich and poor has widened over the past decades (OECD, 2011).

Prof. Mashelkar, President of the Global Research Alliance, proposes the following working definition of ININ:

“Inclusive innovation is any innovation that leads to affordable access of quality goods and services creating livelihood opportunities for the excluded population, primarily at the base of the pyramid, and on a long term sustainable basis with a significant outreach.”

by which he means any innovation, i.e. it could be a technical innovation (new product or service), an organizational innovation, a social innovation (interaction/co-creation), a management innovation (business models), a chain innovation (repositioning in the value chain), a delivery system innovation, a public policy innovation, among many others, that provides affordable access (e.g. an artificial foot priced not at $10,000 but at 300 times less), of quality goods and services (i.e. not bad quality products but products with breakthroughs in the quality of life), for the excluded population (i.e. catering to Prahalad’s (2005) “Bottom of the Pyramid”) in a sustainable way (i.e. affordable not because of subsidies, but market-based), and with a significant outreach (i.e. reaching out to a large population, not just a small segment).

In a more concise way, the World Bank (Dutz, 2007) defines ININ as “knowledge creation and absorption efforts that are most relevant to the needs of the poor”.

The interest and the purpose of inclusive innovation is not just to promote growth, but to cater the lower income groups, the poorer segment of society, by innovating in such a way that their welfare increases (OECD, 2013). It is thus innovation that leads to inclusive growth, i.e. a growth that does not exclude certain classes of society. The aim of inclusive innovation is not just to achieve higher growth rates but also a more equal distribution of income. Inclusive can refer to social, geographical and industrial inclusiveness. Innovation can be inclusive not just by providing cheap, affordable goods and services of good quality on a sustainable basis, but also by raising the income of the lower social classes by providing them jobs, higher wages, possibilities to educate their children, new challenges,… What holds for social classes can also hold for geographical regions (reducing regional inequalities), sectors of the economy (rejuvenating declining sectors), labor by gender, age, qualifications.

Overall, the above definitions seem to imply that ININ integrates a more equitable distribution within the innovation process itself by furthering the equality in access, whereas the conventional approach to innovation addresses the issue of equality only ex post, by redistribution of gains. Another important difference between the two approaches is that ININ introduces a paradigm change – More performance is produced with Less resources for Many people (MLM). Conventional approaches focus on More performance, usually also with more resources while the issue of the “size of beneficiaries” is not an issue.

2. A number of related concepts

http://www.theglobalresearchalliance.org/What-we-do/~/media/Files/Resources/What%20is%20Inclusive%20Innovation_Global%20Research%20Alliance.ashx
Inclusive innovation is also sometimes called “pro-poor innovation” or “frugal innovation”. These concepts are difficult to disentangle from inclusive innovation as many characteristics are common to all. **Pro-poor innovation** is innovation that is aimed at the poor. In general, one has in mind the production of goods affordable by them and corresponding to their needs (as in Mashelkar’s definition). The benefit could also be indirect, as when work shifts to unskilled workers, low wage earners or workers from developing countries through a re-organization in the value chain.4

**Frugal innovation** is a particular form of pro-poor and inclusive innovation. It probably originated in India, where it is called *Jugaad innovation*. By that is meant the production of goods and services that are not of the best quality but that are affordable. The existence of certain luxury features, as the various functionalities in a smart phone, are sacrificed to produce a phone that allows just to phone, but that is affordable to the poorest in society. Notice though that Prof. Mashelkar’s view of inclusive innovation requires more than just frugal innovations, such as for example high quality goods and services5.

NESTA’s report (2012) also points out that frugal innovation is not necessarily related only to low cost solutions and could be of great interest for developed economies as well. Frugal innovation responds to limitations in resources, whether financial, material or institutional, and through a range of methods turns these constraints into advantages. Successful frugal innovations are not only low cost, but outperform the alternative and can be made available at large scale. Often, but not always, frugal innovations have an explicitly social mission (NESTA, 2012).

In an effort to develop frugal solutions for developed markets the Universe Foundation defines frugal solutions as those that use resources efficiently; enable customers to fulfill their needs adequately, with a decent experience and at a low price; expand a company’s market by opening it to users who otherwise could not afford to use such a solution; when the strategy is to drive down prices and achieve higher sales volume - rather than raising per unit revenue by adding additional features (Universe Foundation, 2013).

When innovations are produced by members of the very group that inclusive innovation is supposed to cater, one speaks of *grassroot innovation*. As examples, let us cite the bioethanol produced from starch extracted from cassava (Malaysia), pedal-powered washing machines (the Honeybee Network in India), water harvesting (India)6. Grassroots innovations are introduced mainly at the local level and often by the users themselves, who know their specific needs more than outside suppliers (von Hippel, 1986). This type of innovation has the characteristics of *user innovations*. These grassroot innovations may not have a high potential value outside of the low income community, but they do improve the welfare of the low-income group and they may represent large markets. Grassroot innovations often rest on traditional knowledge, e.g. traditional medicine or processes in agriculture.

Inclusive innovation is often mixed with frugal innovation as both overlap in many respects. Even if there is no clear cut dividing line between ININ and frugal innovation the former seems to be broader than the latter. Also, it appears that the term frugal innovation is more often applied in relation to

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4 Hiring children or workers at subsistence wages in developing countries is not what is meant here.
5 Prior to inclusive innovation Mashelkar used the term Gandhian innovation that includes three types of innovation: disrupting business models, modifying organizational capabilities and creating or sourcing new capabilities (Prahalad and Mashelkar, 2010).
6 See OECD (2013).
business concepts (such as cost minimization) whereas the notion of ININ tends to be related to broader considerations that the national innovation system has to fulfill. However, quite a few gaps exist in our understanding of ININ and a number of questions arises that need to be answered.

3. Critical view on inclusive innovations

Let’s not confuse the normative and the positive aspect of the discussion about inclusive innovation. It is certainly commendable to care about the poor, the unemployed, the excluded in society. This does not prevent us, however, to raise a number of questions regarding the feasibility of reducing inequality or exclusiveness through innovation, or at least to recognize the obstacles that are likely to be encountered in doing so. Here are a number of those challenges.

   a) Conflicts among policy objectives

Growth and fairness in the distribution of income or the allocation of work or resources may not always be compatible, at least in the short run. Think of the patent system, which is designed to protect the inventor by offering a temporary monopoly power and in this way secure the incentive to innovate. There are good reasons to argue that to achieve two goals you need two means. Nothing prevents us, however, to try and conceive of strategies that promote both objectives at the same time, e.g. to increase distributional equity through innovation.

Given limited government resources, a policy in favor of inclusive innovation may conflict with a growth maximizing policy that does not include distributional equity considerations. In that case, one interesting question to explore would be - to what extent the two policies are complementary or substitutes. Should government aim for research poles of excellence that would drive innovation elsewhere, in particular also benefit low-income groups, or should the effort go towards inclusive innovation that would drive up growth? Which spillovers are larger, those from bottom-up pro-poor innovations or those from top-down centers of excellence? What is the effect of both approaches on job creation?

There could be a conflict between inclusiveness in job creation (across regions, classes, industries, or types of workers) and the drive to be competitive by specializing in certain activities. There may also be conflicts between social classes. Improving the fate of the second lowest quintile of the income distribution may have positive spillover effects for, but may also conflict with, the bottom quintile of the income distribution, because the two lowest quintiles may not have the same needs and aspirations (see Kaplinsky (2011b)).

Society, social scientists and policy makers have to find ways to solve these conflicts. For instance, if society has to define a list of desired and affordable products for the poor, how would the ranking of those goods be established? If there is a tradeoff between growth and equity in the access to work and resources, how can this conflict be solved in a globalized world? There are pressing problems in developed and developing economies whose solutions require relevant science and technology now. Jobs creation might be one of those problems (Whitesides, 2011).

   b) Tradeoff between price and quality: consumer preferences
With frugal innovation, there is a tradeoff between price and quality. We need to know what the exact preferences for quality and affordability are. For the sake of the argument, we may think of so-called “Giffen goods”. It may well be that there is no demand for some of the cheaper goods. Poor people strive for the same quality goods as the more fortunate people. There may also be a signaling element, a status symbol in buying those goods. Of course, there is a difference between what poor people wish and what they can afford.

Another aspect is that cheap goods might not last as long or require more maintenance, and therefore not be in great demand, because in the long run they turn out not to be so cheap after all.

The strategy of “more for less for more” (MLM) promoted by Mashelkar is somewhat idealistic. In certain cases it may be possible to come up with a product that is both more affordable and of a better quality. Those are certainly innovations that we should aim at. In general, however, there is a price for producing quality and hence a tradeoff between price and quality. Moreover, the price decrease may only occur later as firms go down the learning curve. The main message of the MLM strategy is a change in mindset, aiming at innovations that are affordable to a large set of people.

Because of existing customs and cultural characteristics, new goods are not always accepted by persons of lower income. Low levels of education combined with tradition and fear to move away from customary methods of living and operating may make the acceptance of new products, processes or business methods challenging. Think of the difficulty of introducing toilets in Indian villages. Tricks have to be found to get these goods to the low income people, e.g. price schemes such as price discrimination, pay-by-use (leasing rather than buying), chain financing (buying products with a loan attached to it), soft networks (community networks to disseminate the product),…

4. Is there a role for public policy to promote inclusive innovation?

As Kaplinsky (2011b) notes, inclusive innovation is on the rise because of the emerging economies and the creation of a middle class, new radical technologies such as ICT, biotechnology and nanotechnology, an increase in the South/South trade, and the existence of disruptive entrepreneurs (such as the Bill and Melinda Gates Foundation). But despite the rising trend, we may want to find ways to promote inclusive innovation. In this respect, government policies need to be more open to new approaches to innovation and respond quicker to new initiatives.

An interesting idea is to announce the need to come up with certain innovations that would especially benefit the poor, but that do not come about because they do not generate a lot of profit. Think of the desire to eradicate malaria or HIV, which affect especially poor countries; or developing better drugs for cancer treatment that affects population in developed economies. Here we have a clear market failure. One could conceive of research subsidies for research aimed at these products or of other incentives such as prizes or public procurement. Even in European countries, one could imagine the establishment of a list of desired challenges (e.g. big societal challenges) whose solutions would be more or less endowed with subsidies or prizes, set up in a democratic way and financed either by taxpayers’ money or by rich foundations.

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7 See the discussion and references in OECD (2013).
In the European context inclusive innovation should be viewed from the perspective of both business and public policy. Some European companies are already exploiting the potential of large pro-poor markets in developing economies where they will be increasingly faced with strong local competition. However, the prolonged crisis in a number of EU economies tends to show that an increasing share of consumers is looking for low cost goods and services that they can afford. Which companies will meet their demand, and how are European companies going to accommodate their business models?

For public policy shaping inclusive innovation presents a new space that could be explored to address pressing societal challenges. Here, EU policies need to allow for more experimentation and piloting regarding the support for inclusive innovation. One of the most urgent problems that need to be tackled with complementary approaches such as inclusive innovation is related to mitigating the unemployment problems, in particular of the young, highly educated people. States have invested substantially in the education of those people and if their knowledge is not used rapidly it may soon become obsolete; some countries are already facing emigration of their most educated and talented people.

As revealed by the discussions at Brighton workshop the relation between “innovation” and “inclusiveiveness” has many faces that are context based. Quite a few discussants considered that inclusive growth needs to be related also to inclusiveness in employment that is of particular importance for Europe (R. Nelson, M. Kollatz, L. Soete). As pointed out by Kollatz, EU has innovation excellence, which is its strongest innovation leg, and regional innovation, which is much weaker. The missing leg of European innovation system is, however, inclusive innovation where the focus could also be on job creation.

References


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