

# **The Cultural Innovation Sub-system**

## **Improving the effectiveness of National Innovation System (NIS) initiatives in developing nations**

*(A working Paper)*

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## Abstract:

This paper deals with the progress of the concept of the National Innovation System, from a perspective of developing countries, keeping in mind the different aspects of entrepreneurship based on the contributions of Schumpeterian economics.

It examines three possible focus areas for NISs, including technological (The Research & Development / Science & Technology approach to innovation), non-technological (Innovation methods other than product innovation), and Cultural/Creative Industries.

We argue that in the context of some developing countries with inadequate R&D infrastructures and economic development, the Cultural-Creative industries perspective can be more effective in strengthening innovation. We present three lenses that can help shed the light on the contribution of cultural and creative industries to innovation in these contexts.

This paper makes a number of propositions, related to the effectiveness of R&D spending aiming to improve innovation in developing countries, and comparing the impact of supporting innovation through cultural industries versus R&D in the same context. We then propose certain expected areas where investments in cultural industries can strengthen innovation.

## Innovation and (National) Innovation Systems

We will begin by looking at the different types of innovation, utilizing a widely approved framework for this classification, moving toward an exploration of the concept and evolution of National Innovation Systems (NISs) and major arguments in support of their utility and value, and presenting the case for the need of National Innovation Systems more suitable in the context of economic growth in the case of developing nations with limited R&D infrastructures.

### **Innovation and its types**

Following the approach of Kock and Guillen (2001), we will begin by considering the perception of Schumpeter (1934) that economic development is driven by innovations, i.e. ‘the carrying out of new combinations’. Schumpeter’s view distinguishes between 5 innovation types (1. the introduction of a new good, 2. the use of a new method of production, 3. the opening of a new market, 4. the utilization of a new source of supply or raw materials and 5. the creation of a new type of industrial organization). Winter (1995) postulates that if the creation of the innovation is not quickly followed by an imitation, such a new combination creates scarcity, or a monopoly rent, hence the creation of added economic value.

Dosi’s (1988) definition is consistent, where innovation concerns “the search for, and the discovery, experimentation, development, imitation, and adoption of new products, new production processes and new organisational set-ups”.

Bradley et al (2012) started from Schumpeter’s formulation towards distinguishing between ‘differentiation-related’ and ‘novelty-related’ innovations, the former concerned

with how entrepreneurs ‘position their products in relation to the competition’, while the latter concerned with new sources of demand and supply.

It is valuable for our arguments in this paper to draw this line of differentiation between technological innovations (which include the creation and marketing of a new product or new technology, usually based on inventing or R&D), and non-technological ones (which are referred as ‘soft’ innovations in some of the papers referenced later). Pereira and Romero (2013) utilize Martikainen’s analysis (2008) of the impact of technological and non-technological innovations using data from an ad hoc survey conducted in the year 2008. The survey defines non-technological innovations following the Sawhney et al. (2006) approach which includes nine non-technological dimensions of innovation: solutions, brands, networks, presence (where), supply chain, organizational, value capture, customer experience and customers (who).

### **The ‘National Innovation System’ concept: reasoning, and evolution**

Lundvall et al (2002) trace the evolution of ‘National Innovation System’ concept. The ‘innovation system’ concept was introduced in Lundvall (1985). Chris Freeman (1987) brought the ‘National Innovation System’ (NIS) concept into the literature in his book on innovation in Japan. And the concept was also present in Dick Nelson’s work (1993) and other US-scholars engaged in comparing the US system of science and technology with other national systems. Nelson (1993) introduced the concept of ‘technonationalism’ “combining a strong belief that the technological capabilities of a nation's firms are a key source of their competitive prowess, with a belief that these capabilities are in a sense national, and can be built by national action”.

Sharif (2006) lists an account of NIS based on Metcalfe's definition (OECD, 1999) as the "set of institutions that (jointly and individually) contribute to the development and diffusion of new technologies. These institutions provide the framework within which governments form and implement policies to influence the innovation process. As such, it is a system of interconnected institutions to create, store, and transfer the knowledge, skills, and artifacts which define new technologies".

Nelson (1993) defines the NIS as referring to the "national system for technical innovation, including the institutions and mechanisms that support innovation. Although Lundvall (2002) argues that a "narrow focus on the role of science and science-based activities is not what is most needed. We need a concept that covers all aspects of competence building in socio-economic activities".

Sharif (2006) considers the National Innovation System to refer to the "assemblage of policy and market elements that constitutes innovative capability" and he includes Freeman's (1987) definition of the system as something existing in every country, where "some [NISs] are more effective, some are not. Some are embryonic, some are almost non-existent, but they have something".

Copus et al (2008) quote a number of different studies that cover aspects of the centralization of innovation within certain clusters and regions, be it based on economic centrality, or regional accessibility, among other factors. This 'territorial' nature of competitiveness and economic capacity, along with a number of defining factors like Porterian 'diamond dynamics', localized capabilities, or relational assets, supports the view that National Innovative Systems have significant economic potential.

Most empirical studies of globalisation's impact on national systems seem to indicate that the national level remains important for certain innovation activities (Lundvall et al, 2002). Success in innovation, particularly R&D product innovation, has to involve non-price relationships between agents: co-operation and co-ordination relationships. Pure market relationships are incapable of transmitting the needed qualitative information between users and different producer groups to make product innovation work (Lundvall 1985).

The systems of innovation approach claims that firms don't innovate in isolation, but interacting with other firms (Edquist, 2005). A number of arguments can be used to help demonstrate the economic creative potential of the NIS concept (Lundvall et al, 2002).

One of these arguments is by Johnson (1992) that starts with a definition of institutions as "as norms, habits and rules are deeply ingrained in society and they play a major role in determining how people relate to each other and how they learn and use their knowledge" and proceeds to conclude that "in an economy, characterized by ongoing innovation and fundamental uncertainty, the institutional setting will have a major impact upon how economic agents behave and as well upon the conduct and performance of the system as a whole". Another argument illustrates that innovation systems, where communicative rationality played a major role – as opposed to strategic and instrumental rationality usually assumed in economics – "might be better off in the long run than the standard exchange economy" (See Habermas, 1984).

## Successful NIS: an exploration

There have been many efforts to study and understand National Innovation Systems and their impact on strengthening national innovation and economic contribution. A number of academic efforts have helped lay out foundations for understanding factors that can help the NIS in supporting national innovation efforts and economic growth. Important considerations for national technology policy include the accumulated national technological competences, national strategic policy cohesion, national specialism (like national culture and flexibility), international orientation and economic management skills (Davenport & Bibby, 1999).

As we go over some of these, we keep a critical view, differentiating between supporting innovation in an R&D-friendly (high income, suitable S&T infrastructure) country, and a developing one with less such capabilities.

In a major comparative study, Nelson (1993) assesses the national S&T policies, and public and private organizations involved in R&D in three sets of countries (high-income, high income with smaller populations and resources, lower income developing countries). He concludes that for the 'high-income group', "defense, security, and military concerns have played a primary role in motivating, initiating, and sustaining technical innovation. He also assembles factors that affect performance of NIS systems, and those include the existence of competent industries in their product lines, strong national education and training systems, appropriate fiscal/monetary/trade policies, and high levels of military and R&D spending. (Rondinelli, 1993)

Rothwell (1977) considers the Sappho-study to conclude that there is strong support for the fact that innovation has to do with long-term relationships and close interaction with



agents external to the firm. This supports the view of the territorial nature of innovation, and the value that a national system can add.

Lundvall (2001) has conducted a comparative study on the Danish innovation system, and made a number of valuable observations, but one very relevant to our line of proof is ‘Lesson no 3. On the importance of innovation in low technology sectors’. The researcher observes that the wealth of the Danish innovation system has been built in spite of a specialization in low-technology sectors, and that most of its innovations were incremental and experience based (as opposed to radical and science-based). He also points out the importance of keeping in mind the value of competence renewal in traditional and service sectors.

## **Developing Countries and Building on Cultural Industries**

### **Developing countries: Innovation infrastructures**

This paper tries to apply and explore the value of one particular component of national Innovation systems which is particularly useful in contexts of underdeveloped or developing countries. To do this, we must begin by clarifying the ‘developing countries’ group. A quick review of the different groupings by the International Monetary Fund (2014) and the United Nations (2010) shows a certain division between developing, least developed, and developed countries. For our purposes we are not interested in an exact and clear-cut boundary between the groups as that will add little to our case.

We will concern our discussion with the group of countries who are less capable to benefit efficiently from a National Innovation System based mostly on R&D Investment, due to lack of efficiency of such an investment (explored in more detail later). These

countries most probably belong to the ‘developing group’ in the mentioned groupings, don’t have high-enough military spending, R&D expenditure per capita, as well as aggregate R&D expenses, with relatively weaker Science & Technology (S&T) infrastructures.

These countries are most likely ‘peripheral’ economically. Peripherality, as defined by Goodall (1987), is the “condition experienced by individuals, firms, and regions at the edge of the communication system, where they are away from the core or controlling center of the economy”. This peripherality in our case implies – among other factors – lower access to R&D resources, financial and intellectual property, technologies, distribution systems, and access to foreign markets, while keeping in mind that this classification is not sharp but approximate.

Davenport and Bibby (1999) argue that international economic networks, formed of large Multinational enterprises (MNEs) and localized clusters in the emerging technologies determine and control technological paths beyond national borders. They speculate that even industrialized nations, but that are small and have neither a broad technological base, extensive science and technology (S&T) infrastructure, nor in-country based MNE’s (their study takes New Zealand as a typical example), run the risk of being ‘marginalized’ when competing globally, through an inability to become involved in these networks. It is easy to see that this risk of marginalization is even higher and more pronounced and significant in the case of developing countries, which include medium and large countries in terms of population.

Lundvall et al (2002) contend that even though the modern version of national innovation system was developed mainly in the rich countries (US / UK / France / Scandinavia), and

a narrow circle of academics interested in science and technology (S&T) policy, currently the interest for the NIS perspective is growing strongly in Latin America, Asia, and Africa.

### **The R&D perspective & Issues for Developing countries**

As we've seen, most national innovation systems thinking was initially directed at supporting innovation based on strengthening R&D or as part of a technology policy, and we argue that such an approach is not the best suited for the group of developing countries we're considering. Focusing on supporting innovation solely/mostly through R&D for these countries carries a number of risks and might not be the shortest path to strengthening the innovation system, especially since we've presented a number of different approaches to innovation, which all can deliver economic development. Even though the broad concept of NIS may be very useful for promoting sustainable economic growth and well-being for countries in the 'south', at the same time the concept needs to be adapted and developed further so that it becomes more adequate for the situation of those countries (Lundvall et al, 2002). There is a positive relation – for example – between accessibility (non-peripherality) and product innovation, but no such link with process innovation (Sternnberg amd Armdt, 2001). Differentiation-related (marketing and process) innovation is more likely than novelty-related (product) innovation to yield economic gains in developing nations, as they focus and gain more – effectively – from rent-seeking than rent-creating efforts (Bradley et al 2012). Another aspect is evident in Kock and Guillen's (2001) discussion of how entrepreneurs in 'late developing' countries require specific skills to implement specific innovation types

(creation of new markets and the opening of new supply sources), and reference studies on specific capabilities to deal with market efficiencies and failures.

Because new competitive technology is no longer realistically created by ‘lone entrepreneurs’ or firms, but through “complex mechanisms built on inter-organizational networks that transcend national spheres of influence”, Davenport and Bibby (1999) question the efficacy of ‘national technology policies’ that seek to give firms competitive edge based on superior technology in a globalized world. They criticize the recipe given by Walsh (Lundvall and Freeman, 1988) for implementation at the NIS level (based on finding niches , directing limited R&D resources to projects in those niches, and encouraging MNEs based in the country), which tries to solve the problem of the limited resources problem, as inherently risky, particularly if the R&D choices turn out to be ‘wrong’ in hindsight, or if public science and technology investment in intellectual property is lost to international patents in cooperation or FDI.

In addition to the issues of difficulty of operating the country’s funds like a VC, there are other problems with directing major NIS efforts to R&D in the developing countries.

Investment in R&D, due to increasing returns to investment of economies of agglomeration, and investment thresholds, under Schumpeterian logic, would be less attractive in areas that are already lagging, unless the technology gap and scope of imitation are exploited well. (Copus et al, 2008; Criscenzi, 2005, Rodrigues-Pose, 2001).

Our first proposition, due to the number of elements mentioned, is about R&D-focused innovation expenditures in developing countries which have the above issues (termed R&D-lagging):

*Proposition 1: R&D-based National Innovation System expenditures in R&D-lagging countries will be of higher risks and lower effectiveness as compared to developed ones.*

### **More Roads to innovation**

If National Innovation Systems do carry economic development potential, and that potential is not limited to the method of supporting innovation through the R&D/S&T approaches, then according to our initial Schumpeterian (1934) consideration of innovation we must introduce other valuable dimensions for supporting innovation. We will particularly look at contributions in the literature that point to two other possible dimensions: (1) improving innovation by supporting process, non-technological, and ‘soft’ elements, (2) and improving innovation by relying on cultural and creative industries. We will then proceed to develop the latter view, its economic benefits and feasibility, and dimensions of gain that it can introduce.

Pereira and Romero (2013) in considering data from the Innobarometer survey which covers more than 4000 innovative firms (Arundel et al., 2008) state that 52.5% of firms innovate without performing R&D, and the remaining 47.5% either carry out in-house R&D (40%) or outsource to external agents (7.5%). We have already seen (based on Bradley et al, 2012) that in developing countries differentiation-related innovations (as opposed to product/novelty related innovations) can lead to better firm performance.

Helping spark Innovation in ecosystems can – effectively – follow the path of improving ‘soft’ and non-technological sides of innovation management processes, wherein Jaw et

al (2012) list 6 of these (distribution, networking, skill and training, branding, coproduction and internationalization of client base). Lundvall (2002) utilizes Nalebuff and Brandenburger's (1996) Schumpeterian model of innovator strategies (pioneers, adaptationists, imitators, complementors, and mixed strategies) to delineate how an innovation policy can help adjust the composition of innovator types within a population according to more macro goals. Overall, Innovation systems work through the introduction of knowledge into the economy and the society (Lundvall, 2002), and considering the significant value of the 'soft' aspects of innovation, and the iterative character of innovation processes where 'non-technological activities' play a crucial role (Sawhney et al., 2006), It becomes insufficient to see innovation only through the lens of new product development or traditional R&D (Pereira and Romero, 2013). Innovation systems should pay considerable attention to how improved non-technological efforts can adjust the innovation ecosystem better and integrate it with the business environment. Another possible aspect of the National Innovation System is the contributions that the cultural and creative industries can bring to support innovation and economic development. The innovative nature of the creative industries (by definition), and its creation of new objects (albeit frequently non-technological), along with the distributed and shared nature of the 'cultural cores' (Thorsby, 2001), can help show the value that this sector can contribute to National Innovation Systems, and this is discussed in detail in the coming sections.

We are not making any claims that the considered directions within the National Innovation System (Technological/R&D, non-Technological, Cultural/Creative) are mutually exclusive or exhaustive, but that this classification will help shed some light on

building the NIS from the perspective of developing countries. Also our consideration of the cultural industries as a catalyzing component in a National Innovation System is not an argument for the replacement of an R&D/S&T based components of this system, but rather as an addition to the innovative potential of the economy, and as an oblique path towards achieving targeted technological development obliquely by supporting industries whose innovations diffuse into ICT and other innovative sectors.

In the next sections we introduce the Cultural/Creative industries, their possible impacts on innovation, and link the discussion to the utility of National Innovation Systems and the developing countries perspective.

### **Cultural Industries and Creative Industries**

Even though the definition is not a straight manner, we can adhere to some pragmatic standards in defining cultural and creative industries that will help illuminate our line of reasoning. Cultural Industries can be defined as the industries concerned with the creation and circulation and distribution of texts: products heavy on signification, light on functionality, and created with a communicative goal primarily in mind (Hesmondhalgh, 2007). The UNESCO defines 10 sectors to be included within statistics concerning cultural industries (1. Publishing and literature. 2. Performing arts. 3. Music. 4. Film, video, and photography. 5. Broadcasting (television and radio). 6. Visual arts and crafts. 7. Advertising. 8. Design, including fashion. 9. Museums, galleries, and libraries. 10. Interactive media (Web, games, mobile, etc.)) – There are a number of other sectors which are still being debated. (Flew & Cunningham 2010).

As for ‘creative industries’, they are defined as the industries based upon activities that have their origin in individual creativity, skill and talent. According to this creative industries include the following sectors: the performing arts, advertising, architecture, the art and antiques market, crafts, design, designer fashion, film and video, interactive leisure software (such as computer games), music, publishing, software and computer services, and television and radio. (Jaw et al. 2012; Department for Culture, Media and Sport [DCMS], 1998).

A significant discussion has been done academically regarding the term (Hesmondhalgh 2007), but it makes little influence to our particular line of argument. An interesting and valuable view, most notably the work of Thorsby (2001, 2008), blends the two. Arts and cultural industries are the considered to be respective core subsets of the creative industries in what is known as the “concentric circles” approach. Thus, industries are distinguished by the “core” role given to creativity in the input stage of production (e.g., the visual arts would be seen as a “core,” but advertising would be seen as more “peripheral” as it combines creative inputs with other inputs).



Figure 1 UNCTAD model of the creative industries (UNCTAD, 2008)



## **Building on Cultural/Creative Industries for Innovation & Knowledge Economy**

In the contemporary knowledge economy, where knowledge is recognized as the driver of productivity and economic growth (OECD, 1996), organizational and national competitiveness are based on access to knowledge in the form of skills and capabilities. (Davenport & Bibby, 1999), and a big part of the challenge for organizations and countries is how to understand and manage a ‘socially diffused knowledge production (Gibbons et al., 1994).

Considering this knowledge-based nature of development and innovation in the modern economy, many scholars have stressed the value of supporting cultural and creative industries as a national innovation driver. The emerging knowledge economy has an increasing reliance on intangible and symbolic goods (i.e. cultural industries) and there is a decline in the importance of traditional boundaries identified by business functions (De Laurentis, 2006).

The route of supporting cultural and creative industries to strengthen innovation, as a component of the National Innovation System has been tackled by both academics and policy bodies increasingly. This is particularly valid for developing countries, as we’ve shown before that they stand to miss-out on most of the gains that an R&D/S&T approach to NIS can create without the adequate infrastructures.

Knowledge, comparable to regional natural resources, can be considered to constitute both economic and cultural capital (Granham, 2002), and Innovation and creativity are not the prerogative solely of high-tech firms, but of other high-concept activities like the creative industries (Brandellero & Kloosterman, 2010).

Because creativity in the cultural industries is more closely related to individual talent (compared to R&D innovation), which is stimulated through interaction with different agents (Scott 1997), experiences, and boundary presence of the creator, it is reasonable to assume that it is more easily stimulated by a less integrated external investment than technologically-driven innovation.

In addition to the inherent benefits associated with supporting cultural/creative industry-driven innovation, we can see that many of the risks and downsides associated with R&D/S&T driven national innovation systems (discussed before) are marginalized in this view: examples include the problems of peripherality, high investment thresholds, appropriation of innovation rents, imitation, and the lack of education, technology, and military industry infrastructures.

### **Successful and Unsuccessful initiatives in Fostering Creative Industries Innovation**

Our review of some studies done around National Innovation Systems, helps us determine the circumstances and conditions that make creative industries-driven innovation efforts successful, by going through a number of such successful approaches and determining the relevant surrounding conditions, and eventually listing a number of dimensions on which these innovation efforts yields results.

Our consideration of developing countries as an ideal target for incorporation of cultural industries is partly because their lack of R&D supporting infrastructures (discussed previously like networks, momentum, thresholds, infrastructures, military spending, etc...) yields an increased riskiness of investments in R&D-based innovation

improvement, reducing its overall attractiveness and potential gains, possibly to levels lower than the equivalent returns for cultural industries investment.

In the paper by De Laurentis (2006) the presence of a rich and diverse cultural scene, a high concentration of people working in cultural and creative occupations, are listed among factors that can fuel innovation and growth. Eltham (2009) discusses the utilization of cultural policies within the creative industries movement framework to fuel innovation as applied in an Australian context (the Government of Queensland). Flew and Cunningham's (2010) work shows increasing international interest in cultural and creative industries as sources of potential economic activity growth, under the innovation umbrella. The creative Industries Innovation center in Australia, with a budget of \$AUD 17 million, aims to 'provide hands-on assistance to small and medium business in the creative sector to boost their creativity and realize their potential for wealth and job creation'. (Australia Council for the Arts, 2006).

We should heed, however, the fact that utilizing cultural and creative industries to support national innovation systems must necessarily apply within a range of developing countries with rich national identities and strong cultural markets. The quantification of these thresholds is beyond the scope of this paper, as we will assume the discussion covers developing countries with existing national identities and cultural product markets. For purposes of future expansion of this paper, the developing countries which we will consider are countries in the Arab region, where there are strong national/regional identities (lingual, historic, artistic) and local cultural markets, with very inadequate infrastructures for R&D in most of the countries, along with very substantial needs for

innovation in economic activity for purposes of job creation, economic growth, and avoiding marginalization in the creation of future technological paths.

Based on the previous discussion:

*Proposition 2: The NIS expenses spent on developing Cultural/Creative Industries will have lower risks and higher overall economic gains as compared those spent on R&D approaches in developing countries*

### **Three lenses for Cultural Industries impact on Innovation**

Improving the effectiveness of NISs by utilizing creative/cultural industries, particularly in developing countries, is promising and can be illustrated through a number of dimensions. Culture is already considered an important factor in economic growth and job creation (Jaw et al., 2012), and we will utilize resource-based, knowledge, and evolutionary views to explain the strategic dimensions in which a success in cultural industries can contribute to innovation, but because of the scope of this paper, we will not dive into the mechanisms by which cultural and creative industries growth can be achieved. Indeed, our discussion here covers the dimensions of innovation gain given a supported improvement and growth in cultural and creative industries output.

An analysis and factoring of the literature indicates three broad dimensions that can help in understanding improvements in NIS effectiveness based on cultural industries, and these are: cultural products as a resource, contributing to different media & boundary industries, and empowering international presence.

## **The Cultural Product as a reusable creative Resource**

As mentioned earlier, cultural products (texts) have a semiotic component, a communicative goal, and contribute in shaping an understanding of the world, and have unique business-related qualities (Hesmondhalgh, 2007). The very nature of these products makes successful cultural products highly valuable and reusable (example: successful movie sequels, brands, etc...), and able to transfer part of their awareness/attention impact to other products, cultural or otherwise. The symbolic knowledge base within a cultural industries production cluster (Asheim et al., 2007) can be shared within different media, serving to shape meaning and desires of consumers, employing characteristic modes of production and organization (Granham, 1987).

De Laurentis (2006) argues that particularly for peripheral regions, it can be argued that the knowledge economy can be built focusing on value created by cultural assets, as it contributes to content for the emerging media activities. In this logic, cultural assets represent content produced, which feeds the media industries, contributing to knowledge economy competitiveness and economic development.

An NIS can strengthen cultural innovation and production of these cultural assets by adapting the property rights regime so as not to act as a ‘tragedy of the anti-commons’ (Eltham, 2009) locking away large amounts of artistic and creative cultural output, and there are many arguments to the great benefits to innovation that this step can achieve (ibid).

Be it visual items, television series, brands, advertising themes, films, successful cultural products in the national sense are a valuable and rare resource, that can be reused highly as intended (inimitable in this sense). Additionally, a strong cultural products market

which strengthens elements of the local identity (lingual, historic, heritage, artistic, etc...) indirectly adds support to the local innovation base, by requiring – implicitly – new entrants into the country to partner with local players or require their services in localizing product and marketing offering, thereby encouraging knowledge transfer and diffusion to local players. Some studies point on the changed patterns of innovation and entrepreneurial activities due to local elements, requiring a different innovation type, or on how a set of local elements (specialism, political, cultural,...) can shape national innovative activity in developing countries as compared to more developed ones (Kock & Guillen, 2001), and the implicit cultural identity and dominant cultural themes are a subset of these elements.

Cultural products can build on repositories of tacit, uncodified, local traditional knowledge (national/regional) which may be bigger in developing countries (Lundvall et al., 2002), in this sense both providing an input to cultural industries, and safeguarding local knowledge easily susceptible to loss. This statement is accentuated in the light of the model of creative industries presented earlier (UNCTAD, 2008) wherein cultural products serve as cores for a number of interconnected and interdependent industries, including the utilization in production of new cultural products.

*Proposition 3a: Cultural Products, created in support of a NIS, will have higher utilization and ROI rates, per product, compared to equivalent measures for R&D products (eg. Patent, White Paper, Research, etc..)*

*Proposition 3b: A stronger national identity and local cultural product markets will result in more involvement of local businesses and entrepreneurs in innovative projects and industries being introduced in the country by external agents*

### **Contributing to other industries: Media, ICT, and Beyond**

Healthy cultural industries contribute to the success and growth of a set of other ‘peripheral’ industries and supporting media industries. In addition to traditional media companies and those in related industries, this includes novel media channels like ICT ones that would benefit from digitization efforts and initiatives.

Stoneman (2007) notes that creative industries can engage in two different types of innovation: innovation of cultural and aesthetic products, as well as more functional types of innovation, and this is validated by Miles and Green’s (2008) observation on innovation patterns in the creative industries, and their diamond-shaped framework. De Laurentis (2006) points out that digital developments involve the merging of diverse economic activities, from broadcasting through software development to design and advertising. The digital economy grows around content provision within a new conception of publishing and broadcasting. He also finds that digitization has created a new market with strong demand for electronic products and services, strongly increasing demand for content in return, and cultural assets serve such a need. The same goes for e-learning opportunities. Zukauskaitė (2012) points to the link between creative industries and developments in innovation technologies.

This is also the lesson from analyzing the digital value chain (DVC) (Williams, 2000), considering knowledge digitization as a valuable resource. The digital value chain itself

contributes to the creation of many new systems based on ICT, ranging from the fields of e-commerce, e-learning, services, to activities that pursue community development and other interactive processes. Particularly for peripheral regions, development of the DVC, by utilizing cultural, historic, and heritage resources, along with the involvement of their media presence and dynamic memory institutions, means more engagement in knowledge-intensive applications. In this sense, the stock of cultural and creative resources allows these regions to enter the knowledge economy as producers (De Laurentis, 2006).

Shearman (1997) points to a techno-cultural sector, which builds on a blend of new media and information technologies and cultural origins, and includes a wide array of economic activities, from production and distribution of cultural goods, services representing creative input to production (e.g. photography, graphic design, etc.), and design inputs for different products like textiles, clothes, and furniture, and even more generic business and knowledge based activities like advertising and software development.

Findings by Martin et al. (2011) reveal information on the technological needs of symbolic knowledge based industries, thus opening up new dynamic industries and channels of economic activity. Additionally, the research of Jaw et al. (2012) shows how cultural/creative innovation leads to a myriad of innovation in presentation, marketing, and delivery of products, which itself can flow into innovation in other areas. Innovation flows from the realm of content and the symbolic/semiotic/aesthetic nature into other fields.



*Proposition 4: Increasing growth in cultural industries corresponds to an increase of innovation (new projects) and entrepreneurship (new companies) across of a range of neighboring industries including innovative ICT and other creative/knowledge industries.*

### **Empowering International Presence & National Marketing Gains**

Investing in strengthening cultural and creative industries, and in particular cultural products with a national (or regional) character or identification is herein considered in relation to the contribution that it can make to improving efforts aimed at supporting innovation.

Cunningham (2007; 2009) has evaluated 1200 policy documents about creative industries developed outside of the United Kingdom from 1998 to 2006. He found a lot of policy variance and attention to local contextual factors. Flew and Cunningham (2010), comment that among one of the key variants of these policies, the range of Asian approaches ‘strongly emphasize the role of national sociocultural and political circumstances, but still identify opportunities for export growth and successful branding’.

These two factors, export growth and successful branding, are key elements in strengthening national innovation by giving local innovators a wider expected export base and powerful marketing resources.

Two examples that can be used to illustrate this point are the use of national cultural identities and national design identities to improve economic development and innovation potential. Keillor and Hult (1999) define national identity as the extent to which a culture recognizes its unique characteristics, thus generating a set of meanings that differentiates

it from others, and in this sense a national identity can lead to the creation of cultural products that serve as resources in international marketing contexts. Similarly, design identities, resulting from the social relevance of design and the varied implementation of materials and techniques and product appearance, are postulated by Dawson et al. (2005) to be influential on how people receive, interpret, and evaluate products, thus impacting buying decisions. Design identities are transferable to many product sectors, and this is particularly true for some products with a longer heritage tradition. Noting that these two, national identities and national design identities, are not end cultural products, but are elements that can be integral parts within a wide range of cultural, and even functional, products. National heritage too is a cultural element that can enable peripheral regions to increase their competitiveness in the global economy, through its contribution in the creation and utilization of content that can be further distributed and popularized with the advent of digital developments (De Laurentis, 2006).

Such cultural tools and platforms that can be further developed and invested in within a NIS (later forming a virtuous loop) can be utilized in the international marketing and popularization of different products, cultural or otherwise. Examples of cultural products that can benefit from such tools include TV series, film, songs, video games, design services, etc.. Most of these belong to cultural industries that are highly integrated within a network of other creative sector industries. Examples of products that can utilize the marketing potential of these cultural tools include restaurants, foods, design-influenced products like furniture, clothing, textiles, etc...

*Proposition 5: Popularization of national brand identities, and successes linked to national cultural elements, will result in improvements of export-related economic gains across a range of cultural industries and functional-product industries that can utilize cultural marketing elements*

### **Conclusions and Future work**

Throughout this paper, we have started from defining National Innovation Systems, identified three major directions within them, including technological (R&D) innovation, non-technological (process and ‘soft’) innovation, and innovation based on the cultural and creative industries. We have argued that the technological (R&D) dominated innovation improvement efforts carry increased inherent risks and lower effectiveness in the case of a certain group of developing countries with weaker R&D and S&T infrastructures. We have presented the cultural industries (and the bigger superset of creative industries) as a potential direction that can help contribute positively to National Innovation Systems in the case of these countries, and outlined three possible lenses that can help examine the impact of cultural and creative industries on innovation.

As the current paper is not quantitative in nature, it was beyond its scope to create hypothesis and operationalize variables. There are however some examples in the literature for creating variables that operationalize some of the concepts within our propositions, like innovation output, cultural output, and R&D (Copus et al. 2008; Jaw et al. 2012).

The work in this paper can be expanded in the future by looking at the specific criteria that can help determine the impacts that existing national cultural and R&D resources should have on the breakup of efforts and allocation of resources within the National Innovation System. It could be helpful to determine the boundary conditions that make R&D investment more or less attractive as compared to Cultural industries support within the innovation system. Additionally, research can cover specific methods of strengthening the cultural / creative industries and creating cultural product platforms, along with exploring the most effective methods and investment mechanisms to implement this cultural component within an NIS.

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