

# THE IMPACT OF CULTURE ON CREATIVITY

A Study prepared for the European Commission  
(Directorate-General for Education and Culture)

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## APPENDIX 3 TOWARDS A CREATIVITY INDEX: MEASURING EUROPE'S CREATIVE POTENTIAL

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A number of indicators have been established by international organisations and government bodies such as the OECD or the European Union to measure social and economic developments in different countries. PISA is the OECD's Programme for International Student Assessment and ranks countries according to their student's abilities for full participation in society.<sup>447</sup> The World Values Survey assesses the state of social, cultural and political values of different countries around the world. Its results feature in several international comparator exercises.<sup>448</sup> In the economic domain, the World Economic Forum has been assessing the competitiveness of nations for nearly three decades.<sup>449</sup> Its global competitiveness report examines the factors enabling national economies to achieve sustained economic growth and long-term prosperity. The Index identifies 12 pillars of competitiveness, including innovation, technology, human capital ("to nurture a well educated workforce") and institutions (including intellectual property). As is the case with many indicators, it does not recognise the role of creativity in fostering innovation.

As part of its Lisbon Strategy the European Commission in 2000 developed a European Innovation Scoreboard to provide a comparative assessment of the innovation performance of EU Member States. This scoreboard has developed into an important tool of pan-European policy learning and succeeded in putting innovation high on the agenda of policy makers in European Member States and Regions. It is based on a wide range of indicators covering structural conditions, knowledge creation, and innovation but has for long underestimated the role that creativity plays in the innovation process. As will be shown in this section, this may be subject to change in the near future.

Measuring creativity is most certainly as challenging as measuring innovation. Innovation can rely on data that is already captured by Eurostat, the European statistical body: this includes number of science and engineering graduates, R&D expenditure, venture capital expenditure in ICT, patent application, etc. However, European and national statistical agencies collect far less detailed data concerning the role of creativity, such as number of art students, expenditure in film, games development or A&R.<sup>450</sup>

Despite this lack of data, the following examines different strategies for measuring creativity at the individual as well as environmental level. On the basis of this assessment we concluded that it is preferable to build a creativity index that focuses on the social and economic factors that influence creativity. In order to identify indicators that could be included in an ECI we reviewed national and international indexes linked to innovation, creativity and cultural consumption.

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<sup>447</sup> See PISA Online, <http://www.pisa.oecd.org/> (accessed January 2009).

<sup>448</sup> See data sets at the project website: <http://www.worldvaluessurvey.com/> (accessed January 2009).

<sup>449</sup> The Global Competitiveness Report 2007-2008 Palgrave Mc Millan, 2007.

<sup>450</sup> Artist & Repertoire – money invested by record companies to sign and develop new artists.

## 1.1 Measuring individual creativity: a challenging task

Traditional notions that considered creativity as a divine ingenuity have not passed the test of time and belong to the past. At the individual level, creativity is nowadays often considered as an individual capacity to make unusual associations and to develop unexpected solutions. Yet, research long stayed clear of any attempts to measure this creative capacity by means of standardised tests, as it was believed that standard evaluations could not capture the full nature of a person's creative abilities.<sup>451</sup>

In this context, several psychological experts have attempted to define and measure creativity in the past 50 years. For example, Guilford<sup>452</sup> made the distinction between two kinds of thinking. While convergent thinking aims at providing the "single best, correct answer", divergent thinking seeks to "generate new and unexpected answer". The latter characterises our western understanding of creativity. In terms of measuring creativity three aspects of thinking are generally evaluated: *fluency* (quality of answer), *flexibility* (variability of idea categories in the answers) and *originality* (uncommonness of answers). *Elaboration* (complexity and completeness of answers) or *effectiveness* (link to the constraints of the real world) may also be included in some tests.

The most widely used test concerning individual creativity is the Torrance Test of Creative Thinking (TTCT), developed for the first time in 1966. It includes two sections: a verbal section ("thinking creatively with words") and a non-verbal one ("thinking creatively with pictures). The first section provides data on *fluency, flexibility and originality*. The second one attempts to measure *fluency, flexibility, elaboration, abstractness of titles and resistance to premature closure*.

However, as previously illustrated creativity is also context-dependent. It can be assessed by analysing psychological properties ("personality attributes"). The two main methods to measure such the non-cognitive aspects are biographical inventories and personality tests. The first seeks to collect data on people's life history such as experience, family background, hobbies, education or life achievement. One of the first biographical inventories was developed in 1968 by Schaefer and Anastasi.<sup>453</sup> As for the second approach, it aims at assessing personal properties such as extraversion, emotion, tolerance, independence or values.

Opinions on reliability, validity and necessity of any of the above ways to test creativity diverge and its context dependency may be a key reason for this. Wallach<sup>454</sup> concludes that "tests tell us little about talent." And while it is possible to test creativity in theory it is not clear whether a person that scores high in a test will also produce creative outputs in real life. That said, creativity tests are today certainly better predictors of potential creativity in real life than, say, IQ tests or school grades.<sup>455</sup> In any case, many scholars (such as

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<sup>451</sup> Cropley A. J., *Creativity in education and learning : a guide for teachers and educators*, Routledge Falmer, London and New York, 2001.

<sup>452</sup> Guilford, J P., Creativity, *American Psychologist*, 5, 1950, p.444-54.

<sup>453</sup> Schaefer, C E and Anastasi, A., A biographical inventory for identifying creativity in adolescent boys, *Journal of Applied Psychology*, 52, 1968, p.42-48.

<sup>454</sup> Wallach, M A, Tests tell us little about talent, *American Scientist*, January-February 1976, p.57-63.

<sup>455</sup> Cropley A.J., A five-year longitudinal study of the validity of creativity tests, *Australian Journal of Psychology*, 6, 1972, p.119-24.

Helson<sup>456</sup> or Kitto, Lock and Rudowicz<sup>457</sup>) suggest considering the results of individual creativity tests as indicators for potential creative abilities rather than as clear proof of a person's creativeness.

For Sternberg<sup>458</sup>, creativity is as much attitude as ability. Creative personalities enjoy risk taking, intrinsic motivation, curiosity, autonomy, flexibility and divergent thinking. As such, creativity is again largely dependent on social and environment factors. It is therefore not only a capacity but a process emerging from interaction between an individual and his or her social and cultural environment.

Nevertheless, large international surveys, such as PISA or TIMMS, measure some aspects of creativity. Yet, they mainly make use of convergent thinking tests. In a short review of these tests Ernesto Villalba concludes that they are not very reliable and that creativity remains context dependent, thus illustrating the difficulty to compare levels of creativity from one country to another.<sup>459</sup>

Taking these different perspectives and commentaries into account it becomes clear that measuring creativity remains a difficult proposition. Similarly to other cross-national indicators we therefore suggest to focus on the environmental factors that stimulate creativity rather than to measure creative capacities. As such, the ECI will include a range of indicators concerning the creative potential of any EU Member State.

## 1.2 Review of existing indexes

To review all possible indicators which could potentially contribute to benchmarking the creative potential of EU Member States the team assessed several creativity- and innovation related indexes. These can broadly be grouped in three categories:

1. Indexes that measure factors of creativity
2. A Cultural Life Index that measure the cultural vitality of a society
3. Innovation Indexes: Characteristics of the indexes – objectives and scope

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<sup>456</sup> Helson, R., A longitudinal study of creative personality in women, *Creativity Research Journal*, 12, 1999, p.89-102.

<sup>457</sup> Kitto, J, Lok, D and Rudowicz, E, Measuring creative thinking : an activity-based approach, *Creativity Research Journal*, 7, 1994, p.59-69.

<sup>458</sup> Sternberg (2006).

<sup>459</sup> Ernesto Villalba – On creativity – JRC Scientific and Technical Report European Communities, 2008.

INDEXES	OBJECTIVE	SCOPE
<b>Creativity Indexes</b>		
Hong Kong Index <sup>460</sup>	- capture the characteristics of the socio-cultural parameters and illustrate the interplay of various factors that contribute to creativity.	Set of cognitive, environmental and personality variables that interact to create creative outputs in Hong Kong's territory.
Euro-Creativity Index <sup>461</sup>	- list elements that would attract the "creative class" to a location	The "3Ts": Technology, Tolerance and Talent
Flemish Index <sup>462</sup>	- benchmark regional innovation	Technical innovation, entrepreneurship and openness of society.
<b>Cultural Life Index</b>		
Finnish Report <sup>463</sup>	- compile indicators of cultural life	The cultural sector including: music, dance, theatre, fine arts, cultural heritage, libraries, cinema and video, magazines and newspapers.

<sup>460</sup> The "Hong Kong Creativity Index" developed by the Home Affairs Bureau of the Hong Kong Special Administrative Region Government published in November 2004.

<sup>461</sup> The "Euro-Creativity Index" developed in the report "Europe in the creative age" by Florida and Tinagli in 2004 on the basis of "The Rise of the Creative Class" published in 2002.

<sup>462</sup> "A Composite Index of the Creative Economy" by Bowen, H.P., and Sleuwaegen, L. from Vlerick Leuven Gent Management School and W.Moesen from the Catholic University of Leuven, 2006.

<sup>463</sup> The report prepared for the Finnish Ministry of Education and Culture by Picard, R.G., Grölund, M. and Toivonen, T. on the "Means for Overall Assessment of Cultural Life and Measuring the Involvement of the Cultural Sector in the Information Society" published in 2003.

Innovation Indexes		
EIS <sup>464</sup>	- rank the most innovative Member States	Technological innovation
Oslo Manual <sup>465</sup>	- have a better understanding of the innovation process	Economic output as well as human capital (education, talent)

### 1.2.1 The Hong Kong Index (HKI)

With 88 indicators, the HKI is the richest and most thorough attempt to “illustrate the interplay of various factors that contribute to the growth of creativity.”<sup>466</sup> It encompasses four domains – human, social, cultural and institutional – that contribute to such growth. It also highlights that “the accumulated effects and interplay of these different forms of capital are the measurable outputs/outcomes of creativity.”<sup>467</sup> As such, the index was a source of inspiration in relation to identifying relevant indicators for the ECI, especially with regards to the following areas:

- human capital (notably educational qualifications)
- the social capital conducive to creativity (including level of tolerance and diversity)
- cultural participation as well as cultural offering (museums, venues) as a factor to simulate creativity
- institutional parameters conducive to creativity (intellectual property, fiscal incentives, technology infrastructure).
- Outcomes of creativity (importance of creative industries)

However, the extensive scope of the HKI is also challenging with regards to the purpose of our assignment. As it mixes a range of indicators that are related to technology roll out and scientific advances it may be somewhat prone to undermining the impact that cultural factors have on creativity. Furthermore, the vast amount of indicators used seems impractical for a trans-national survey, due to reasons of data collection

<sup>464</sup> The “*European Innovation Scoreboard 2007*” prepared by the Directorate-General for Enterprises and Industry of the European Commission under the Lisbon Strategy.

<sup>465</sup> The “*Oslo Manual: the Measurement of Scientific and Technological Activities, Guidelines for collecting and interpreting innovation data*”, 3<sup>rd</sup> Edition, a joint publication of OECD and Eurostat, 2005.

<sup>466</sup> “*A Study on Hong Kong Creativity Index*” commissioned by the Home Affairs Bureau of the Hong Kong Special Administrative Region Government published in November 2004.

<sup>467</sup> Ibid.

and availability. A European index requires fewer indicators to remain manageable across disciplines for which data can be collected.

### 1.2.2 The Euro-Creativity Index

This 2004 follow-up European version of Richard Florida's work in the US, published in collaboration with UK-based think tank Demos, further elaborates the importance of place in a global competition to attract talents and creativity to Europe's cities and regions. Florida's index has certainly acted as a source of inspiration in relation to the development of our openness and diversity indicators – both factors contributing to the establishment of an environment that is conducive to creativity and innovation (see description of our main pillars of creativity in 1.3).

However, the definition of creativity used in Florida's Euro-Creativity Index is much broader than the one used in this study. For example, a large number of indicators selected for his index are assessing science-based factors of creativity (patents, R&D expenditure, number of scientists, etc.) and have thus not found their way into our index, which is related to culture. Other criticisms of the index include the argument that the correlations between different data sets are not sound and don't allow to make the conclusions that Florida brings forward.<sup>468</sup> Nevertheless, given the big focus that public as well as private bodies put on creativity his theory's contemporary relevance seem unquestionable.

### 1.2.3 The Flanders Index

The Flanders Creativity Index has been developed by Flanders DG, a regional body responsible for fostering entrepreneurship and innovation in Flanders as well as to stimulate economic relations with several creative partner regions throughout the world (Baden Württemberg, Catalonia, Flanders, Lombardy, Maryland (USA), Nord-Pas-de-Calais, Quebec (Canada), Rhone-Alpes, Scotland). As such, it has a distinct regional focus and could not be applicable for cross-country comparisons.

Similarly to the Florida Index the Flanders Approach considers creativity to be a much wider concept than the one used in this study and links it to notions of scientific and technological innovation and entrepreneurship. It does not, however, put any remarkable emphasis on the role of culture in stimulating creativity. The Flemish Index gives great importance to the notion of openness and explains that a city environment in terms of urban population and diversity (share of foreigners and of foreign students in total population) has an impact on creativity. As will be seen, this notion of openness will be reflected in our set of indicators.

### 1.2.4 The Finnish report

The Report on Cultural Life by the Finnish Ministry of Education and Culture is a compilation of indicators of cultural life (62 indicators). It is broken down into three sub-indices: cultural availability, cultural participation

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<sup>468</sup> Malanga, S. The curse of the Creative Class, *City Journal*, winter, 2004, pp 36-45 or Boschma, R.A. and Fritsch, M. *Creative class and regional growth – Empirical evidence from Eight European Countries*. The Jena Economic Research Papers, 2007.

and cultural production. It enables to weight the creative potential of a country in relation to the availability of cultural resources and cultural participation. It serves to illustrate the importance of cultural participation and infrastructure to stimulate creativity and divergent thinking in a given society. It is assumed that a rich cultural environment benefits creativity and that social life triggered by cultural activities supports the creative economy.<sup>469</sup>

### 1.2.5 The European innovation scoreboard

The European Innovation Scoreboard was introduced under the Lisbon strategy and first published in 2001. Since then, it has provided an annual assessment of the innovation performance of EU Member States. The assessment is based on a wide range of indicators covering structural conditions, knowledge creation, innovative efforts by firms, and outputs in terms of new products, services and intellectual property.

It has to be acknowledged that the Innovation Scoreboard has successfully contributed to putting innovation on the policy agendas of national and regional policy makers alike throughout Europe. Yet, to some extent, this may be the result of a somewhat controversial ranking of EU Member States' innovation capacity, which has led to criticism of underlying methods and selected indicators. For example, Schimbany et al detected a certain high-tech bias in the Scoreboard and claimed that such would favour countries with a certain industrial structure although innovation could also take place outside high-tech sectors.<sup>470</sup> This bias of EU innovation policy (and especially funding) towards technology has long been criticised by European content stakeholders.

However, the most recent publication of the 2008 Scoreboard (released in January 2009) recognises such bias and highlights the importance of non-R&D innovation, including creativity and design:

"An important part of non-R&D innovation is creativity and design. As a contribution to the 2009 European Year of Creativity and Innovation, a Design, Creativity and Innovation scoreboard was constructed using a range of novel indicators. The analysis of this scoreboard shows that countries with a good creative climate tend to have higher levels of R&D and design activities and also strong overall innovation performance. These findings point to the need to consider design and other non-R&D activities as part of the broader approach to innovation policy as well as to the strong links between creativity and innovation."<sup>471</sup>

Yet, while non-R&D indicators (such as innovation expenditure not related to R&D) are included in the actual Scoreboard the creativity and design related indicators will be published as part of a separate document in 2009. Preliminary findings of this document were taken into account during the course of this assignment by discussing similar approaches taken at a European Commission-organised workshop the measurement of creativity.

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<sup>469</sup> See in particular Elizabeth Currid, *The Warhol Economy, How Fashion, Art and Music Drive New York City*, Princeton University Press, 2007.

<sup>470</sup> Schimbany, Andreas and Gerhard Streicher, "How not to compare innovation performance: A critical assessment of the European Innovation Scoreboard", Joanneum Research, 2008.

<sup>471</sup> UNU-MERIT, European Innovation Scoreboard 2008, Inno Metrix, 2009.



With regards to the 2007 version of the Scoreboard we adopted indicators concerning the following:

- The relevance of ICT infrastructure as a tool to enable the development of creativity<sup>472</sup>
- Ways to measure human capital formation in society

There are several interferences of the new design-related innovation indicators which will be included the 2009 paper on creativity, design and innovation and the creativity indicator proposed in this study. These include:

- Approaches to measure the value of creative education
- Cultural expenditure
- Approaches to measure openness and tolerance in society
- Value added by cultural and creative industries to national GDP

A difference is, however, that the EIS indicators are primarily geared towards innovation by enterprises while the proposed indicators in this assignment examine the wider contribution of culture to creativity in economic and social domains in the EU.

#### 1.2.6 The Oslo manual

The Manual is the basis for most innovation surveys in the EU and around the world. Encompassing a wide range of possible innovations, the third version of the Oslo Manual offers us a rich understanding of the innovation process.<sup>473</sup> Contrary to the previous Manual, it does not focus exclusively on technological innovation (product and process innovations) but also includes organisational and marketing innovations. For the first time, the 3<sup>rd</sup> version of the Manual investigates the field of non-technological innovation and the linkages between different innovation types. However, as is the case with the European Innovation Scoreboard, the Manual does little to consider the role of culture and creativity in fostering innovation.

In conclusion of the existing indexes or reports are based on different definitions of creativity and innovation. They have different objectives and scopes with different geographical remit. They essentially focus on scientific and technology innovation and take little account of art and culture as an indicator of creativity. However, what they have in common is to highlight concepts that are relevant to assess creativity:

- human capital (education)
- technology infrastructure and usage
- social environment (including attitude towards diversity)
- industrial property
- institutional and regulatory environment.

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<sup>472</sup>[http://ec.europa.eu/information\\_society/tl/research/index\\_en.htm](http://ec.europa.eu/information_society/tl/research/index_en.htm) DG Information Society.

<sup>473</sup> OECD, Guidelines for Measuring Innovation Data, The Oslo Manual, <http://www.oecd.org/> (accessed January 2009).

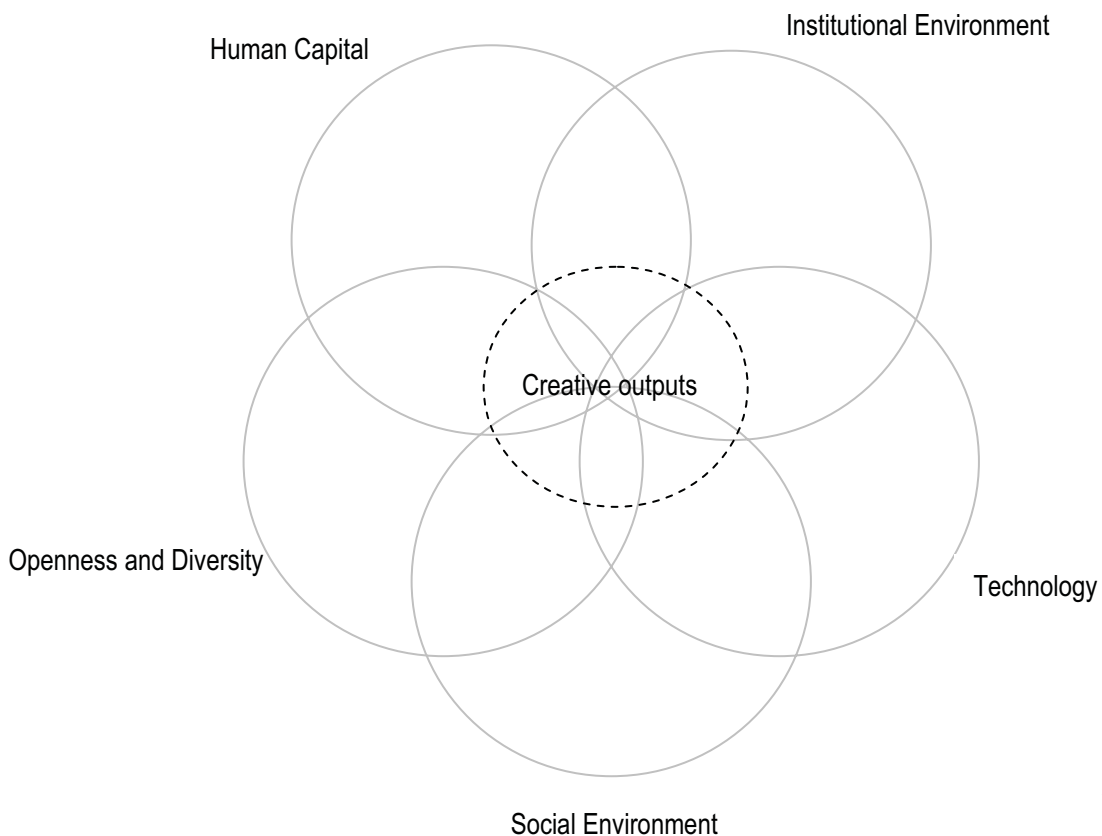
### 1.3 Establishing the European Creativity Index (ECI)

The European Creativity Index (ECI) is a new statistical framework for illustrating and measuring the interplay of various factors that contribute to the growth of creativity in the European Union. As other indicators it measures the performance of a phenomenon using a set of indicators which highlight some of the key features of that phenomenon. It is inspired by existing indexes concerning creativity, innovation and economic performance but introduces elements that are more specifically related to art and culture in order to ensure that a cultural dimension is taken into account when measuring the creative and innovative potential of Europe. Due to the nature of the assignment the proposed creativity index is by definition primarily assessing environmental factors rather than individual creative capacities.

A focus on the cultural dimension of creativity implies taking into consideration a number of factors, many of which are usually not included in other indexes. These include, but are not limited to:

- education in art schools
- cultural employment
- cultural offering
- cultural participation
- technology penetration
- regulatory and financial support to creation
- economic contribution of cultural industries

We group these indicators into 6 pillars of creativity, illustrated in the graph below:



## 1.3.1 Analysis of the pillars of creativity

### 1.3.1.1 Human Capital

Human capital – defined by the OECD as "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being." – has long been acknowledged to stimulate economic growth and social progress.<sup>474</sup> While it is shaped by a range of external factors (including economic status and cultural norms and values) learning and education are important indicators concerning the levels of human capital in any given society.<sup>475</sup> Increasingly, the role of lifelong learning is also acknowledged as essential in stimulating human capital formation.

Chapter four of this report illustrated the vital role that learning and education have in facilitating the development of creative talents. Nevertheless, there are also arguments opposing this positive influence of education and training on creativity. After all, education often provides us with thought patterns most common to society and not necessarily with the tools to exploit original ideas and disrupt the status quo. Are we "educating people out of their creativity", as Robinson claims?<sup>476</sup> Following this line of thought, Claxton<sup>477</sup> highlights that traditional teaching is mainly built on dispositions of analytical thinking and tends to neglect other qualities of mind, such as imagination, intuition and intrinsic curiosity – skills that are key to creativity.

Policy documents increasingly seem to acknowledge that the way we learn and develop human capital needs to involve more interdisciplinary, non-cognitive and communicative approaches.<sup>478</sup> As shown in Chapter four, culture-based interventions in schools, higher education and life long learning can facilitate this creativity shift in learning: "The arts provide an environment where the learner is actively engaged in creative experiences, processes and development."<sup>479</sup> "Research indicates that introducing learners to artistic processes, while incorporating elements of their own culture into education, cultivates in each individual a sense of creativity and initiative, a fertile imagination, emotional intelligence and a moral "compass", a capacity for critical reflection, a sense of autonomy, and freedom of thought and action."<sup>480</sup>

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<sup>474</sup> OECD, "The Wellbeing of Nations – The Role of Human and Social Capital", OECD, 2001.

<sup>475</sup> Barro, R.J., "Education and economic growth", in Helliwell, J.F.ed. *The contribution of Human and Social Capital to Sustained Economic Growth and Well-Being*, OECD, 2001.

<sup>476</sup> Robinson K., "Do schools kill creativity?" at the TED conference.

([http://www.ted.com/index.php/talks/ken\\_robinson\\_says\\_schools\\_kill\\_creativity.html](http://www.ted.com/index.php/talks/ken_robinson_says_schools_kill_creativity.html))

<sup>477</sup> Claxton G., "Cultivating positive learning dispositions", to appear in Harry Daniels et al. *Routledge Companion to Education*, Routledge, 2008.

<sup>478</sup> OECD, *ibid*

<sup>479</sup> UNESCO "Road Map for arts education" The World conference on Arts Education: building creative capacity for the 21<sup>st</sup> Century, Lisbon 6-9 March 2006.

<sup>480</sup> For examples of research studies and evidence, refer to the reports from preparatory meetings for the World Conference on Arts Education; cf. LEA International at <http://www.unesco.org/culture/lea>.

Education in and through art also stimulates cognitive development and can make how and what learners learn more relevant to the needs of modern society.<sup>481</sup>

On the basis that culture plays an important role in fostering the creative dimensions of human capital we suggest a number of indicators related to:

- The potential of culture- and arts-based education (primary, secondary, tertiary) to help foster creative talents.
- The level of creative talents coming out of tertiary education and in cultural employment.

A table listing all indicators and sub-headings is included under section 1.3.2.

### 1.3.1.2 Openness and diversity

Contemporary notions of economic development put increasing emphasis on the link between open and diverse societies and their creative capacity – particularly so in an economic development context. While more research concerning this causation is certainly needed some evidence exists.

Jane Jacobs was the first to suggest that diversity and the exchange of ideas are a source of innovation and thus play an important role in the creation of powerful and dynamic cities.<sup>482</sup> The exchange between different people from diverse cultural backgrounds increases the diffusion of information. Through a “learning by doing” effect among creative people in a given city innovative solutions and ideas emerge. Pilati and Tremblay further review this notion of a creative city in their article “Cité créative et District culturel; une analyse des thèses en présence.”<sup>483</sup>

Similarly, Richard Florida showed that creativity cannot flourish without a creative climate characterized by “a culture that’s open-minded and diverse.”<sup>484</sup> Regional economic growth is powered by creative people, who prefer places that are diverse, tolerant and open to new ideas. Diversity increases the likeliness that a place will attract different types of creative people. Greater and more diverse concentrations of creative capital in turn lead to higher rates of innovation, high-technology business formation, job generation and economic growth. Importantly, the cultural offering of a city or region (whether indicated by the number of opera houses or the number of underground punk rock bands) makes a place more attractive to these creative talents. Indeed, many argue that there is a highly dynamic relationship between today’s creative entrepreneurs (that are increasingly seen as the motor of the general economy) and the publicly funded arts venues (which stimulate creatives to develop new products and services).

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<sup>481</sup> UNESCO Roadmap *Ibid.*

<sup>482</sup> Jacob, J., *The Death and Life of Great American Cities*, Random House Publishing Group, New York, 1993.

<sup>483</sup> Pilati, T. and Tremblay, D.-G., “Cité créative et District culturel; une analyse des thèses en présence », *Géographie économie, société* 2007/4, Vol. 9, pp. 381-401.

<sup>484</sup> Florida, R., *The Rise of the Creative Class*, Basic Books, 2002.

On a different level, evidence shows that several substantive freedoms – including freedom of expression and the requirement to access a plurality of information sources – impact on individuals' most basic ability to realise their full potential. Sen's capabilities approach to development economics is a major contribution in this field.<sup>485</sup> Nussbaum further develops his line of reasoning and examines the importance of more imaginative, artistic and spiritual ways of individual expression in relation to one's ability to fulfil individual potentials.<sup>486</sup> The basic idea of such a capability approach is that people who have access to cultural and information resources as well as the freedom to express themselves creatively and imaginatively stand better chances to lead a better life.

We suggest a range of indicators that link issues of openness, diversity and media pluralism to the cultural domain. Of course, the cultural offering within a certain territory is also vital to fostering openness and creativity. This important aspect will be included in a separate pillar described below.

### 1.3.1.3. Cultural environment

Today, few policy strategies in European Member States link cultural participation and the performance of the cultural and creative sectors to the general progress of society. "Successful societies in the 21<sup>st</sup> century will be those that nurture a spirit of creativity and foster the cultural activity which goes hand in hand with it" claims a British policy document from 2001.<sup>487</sup> John D. Ong, Chairman Emeritus of the BF Goodrich Company claims the same for his business: "People who create in our companies - whether they are scientists, marketing experts or business strategists, benefit from exposure to art. They cannot create when they work and live in a cultural sterile environment."<sup>488</sup>

The cultural environment – our concert venues, galleries, book stores and cinemas (to name but a few) – are essential to the development of a creative society. They are the hotspots of disruptive debate and provide ground for argumentation, idea development and networking beyond one's restricted circle of contacts. As Elizabeth Currid points out, "creativity would not exist as successfully or efficiently without its social world – the social is not the by-product – it is the decisive mechanism by which cultural products and cultural producers are generated, evaluated and sent to the market."<sup>489</sup> Culture is a driver of creativity precisely because of its "social properties". Moreover, various studies have demonstrated that museums and galleries are "places where creativity can flourish"<sup>490</sup> because they "encourage people to think differently, to take and transmit ideas and to generate new things based on the creativity of the past."<sup>491</sup>

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<sup>485</sup> Sen, A., "Capability and Well-being", in *The Quality of Life*, edited by Nussbaum, M. and Sen, A., Oxford: Clarendon Press, 1993.

<sup>486</sup> Nussbaum, M.C., *Women and Human Development: The Capabilities Approach*, Cambridge University Press, Cambridge, 2000, p.78

<sup>487</sup> UK Department of Culture, Media and Sport, "*Culture and Creativity: The Next Ten Years*", 2001 a Green Paper.

<sup>488</sup> Available at: <http://www.bcainc.org/news.asp.435.html> .

<sup>489</sup> Currid, Elizabeth, "*The Warhol Economy; How Fashion Art and Music drive New York City*", Princeton University Press, 2007.

<sup>490</sup> Hooper-Greenhill E., Dodd J., Gibson L., Phillips M., Jones C., Sullivan E., Museums, Libraries and Archives Council and Renaissance, *What did you learn at the museum today? Second study: evaluation of the outcome and impact of* 190

Yet, it is the exposure to arts and culture that will make people creative – not the mere existence of the earlier. Evidence shows that cultural participation – which we measure by looking into level of attendance at cultural events and participation in cultural activities for lack of better statistical data – produces new ideas and innovative ways of expressing oneself.<sup>492</sup> Tony Travers of the London School of Economics and Stephen Glaister of Imperial College of London highlighted in a report entitled *Valuing Museums: Impact and innovation among national museums*<sup>493</sup>, that “a student visiting a fine art gallery may find inspiration for a stage design or a fabric. A child visiting a science museum may find inspiration for school that would otherwise be missing. These kinds of spontaneous use of museum and gallery holdings can together be seen as creativity.” Similarly, a recent study by Engage looked into the learning benefits of engaging with galleries of contemporary art and living artists. It shows that cultural participation helps people to discover intrinsic resources of talent, ingenuity and aesthetic judgment.<sup>494</sup>

In line with this argumentation we suggest indicators linked to the cultural offer as well as the cultural participation in a given Member State.

#### 1.3.1.4 Technology

The fast development of digital technology transforms the global cultural sphere. In the past ten years technology has had both disruptive and unifying effects in art and the cultural and creative industries, unleashing individual creativity and creating a virtual cultural commons while dismantling traditional business models. As such, identifying indicators concerning the role of Information and Communication Technologies (ICTs) in transforming culture and creativity is a contentious task and bound to create lively debate. However, what is clear is that ICTs will be at the heart of innovative economic and social developments in the 21<sup>st</sup> century and that they are a main means to unleash Europe’s creative potential.

As shown by Manuel Castells, digital technology has set free two opposing processes taking place at the same time: On the one side, culture is becoming global as media companies are able to reach out to the entire planet and provide a plethora of creative content to diverse audiences. On the other side, culture becomes customised, personalised, user-generated and more local.<sup>495</sup> It also shifts increasingly from being focused around experience to engagement. Audiences turn into participants and consumers into creators. Digital is a key driver of this transformation as it enables individuals to express themselves in novel ways and to connect and share their creations with communities of interest around the globe.

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*learning through implementation of Education Programme Delivery Plans across nine Regional Hubs*, Research Centre for Museums and Galleries Citation, Leicester, RCMG, 2006.

<sup>491</sup> Travers, T. and Glaister, S., *Valuing Museums: Impact and innovation among national museums*, National Museums Directors’ Conference, United Kingdom, 2004.

<sup>492</sup> Cultural Initiative Silicon Valley, *Creativity Community Index Study: Measuring Progress Toward A Vibrant Silicon Valley* 2003.

<sup>493</sup> Op cit : Travers, T. and Glaister, S., 2004.

<sup>494</sup> Report *Inspiring Learning in Galleries* published by Engage, London 2008.

<sup>495</sup> Manuel Castells, *L’ère de l’information. Vol. 1. La société en réseaux*. Paris, *Fayard*. 1998.

Helmut Anheier and Yudhishtir Raj Isar, in *Cultures and Globalization: the Cultural Economy*<sup>496</sup>, point out that “the technological products made available to individuals can turn many into creators themselves: from the personal computer and digital camera to the cell phone, humankind inhabits an increasingly networked world in which communication and personal expression and development reign supreme.”

In essence, culture and technology share a reciprocal benefit: By facilitating the creative process technology enables new forms of expression. Artists and creative content in turn drive technology to new levels of sophistication. Personal computers run software for musical composition, for choreography, theatre design and architecture. New technologies also produce new forms of creative activities in areas such as computer animation, sound synthesis or digital graphics.

Our indicators concerning the roll out of digital technology infrastructure and equipment try to capture this reciprocity between culture, creativity and ICT proliferation.

It would have certainly been interesting to integrate further current trends in digital media production and consumption in our framework: For example, indicators concerning the development of new business models related to open-innovation, open content (e.g. the proliferation of open content licences such as Creative Commons in different Member States) or open source products would have been of interest in this respect. However, data concerning such phenomenon is limited. The uptake of creative user-generated content would certainly also be of interest in this context and more research in this area is needed.<sup>497</sup>

#### 1.3.1.5 The institutional environment

The well being of societies and countries is clearly linked to the transparency, accountability and resilience of their regulatory institutions, as highlighted by several NGO's such as Transparency International.<sup>498</sup> Michael Porter also identified the clear links between a country's competitiveness and several institutional factors, including the rule of law and the appropriateness of public policies.<sup>499</sup>

Residing primarily within the remit of Member States, cultural policies and support initiatives for creativity and the creative industries are diverse across the EU (as shown in Chapter five). By assessing each Member States indirect and direct investments into culture we propose to assess a country's ambition to foster an ecosystem conducive to creativity:

- A fundamental mechanism to stimulate creativity and reward creative people or investment in the cultural and creative industries is copyright (or authors' right). Copyright is the equivalent to patent

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<sup>496</sup> Anheier, H. and Raj Isar, Y., *Cultures and Globalization: the Cultural Economy*, Sage, Los Angeles, London, New Dehli, Singapore, 2008.

<sup>497</sup> The authors of this study suggest the commissioning of a short content analysis concerning the share of cultural content within a sample of member profiles on UCG sites such as Myspace, BEBO or Facebook in all European Member States.

<sup>498</sup> The latest Corruption index for the EU and central Europe can be accessed on [www.transparency.org](http://www.transparency.org) (accessed January 2009)

<sup>499</sup> Porter, M. E., *The Competitive Advantage of Nations*, Macmillan, London, 1990.

in R&D; its function is to provide a monopoly right to protect creators and promote investors in creativity. We propose to evaluate the level of remuneration granted to a category of right holders. We suggest the remuneration collected by authors of musical works and music publishers because they are relatively easy to track with the support of rights management societies in the music field.

### 1.3.1.6 The Creative outputs

Europe's cultural and creative industries are increasingly considered to be drivers of creativity and economic growth throughout the economy. The National Endowment of Science, Technology and the Arts' *analysis of the Community Innovation Survey 2004 and input-output data* concerning the trade between creative companies and companies operating outside the creative industries *showed that firms who spend twice the average amount on creative inputs are 25% more likely to introduce product innovations*. It also showed that *firms that have supply chain linkages with creative industries typically offer more diverse and higher quality products than those who don't*.<sup>500</sup>

This causation has been a primary interest of this report and we therefore suggest including statistics concerning the performance of the cultural and creative industries as indicators concerning the creative potential of a country. To be sure, this does not imply that the economic contribution of the sector in terms of GDP is equal to its economic relevance for the general economy. It simply recognises that the cultural and creative sectors are an important motor of creativity and innovation in Europe.

In this context, the index below includes indicators related to the economic contribution of the cultural and creative industries to a Member State's GDP as well as indicators concerning outputs of the sector.

### 1.3.2 The European creativity index

The ECI is thus composed of 32 indicators, grouped over six sub-indexes.

HUMAN CAPITAL	DATA SOURCES
The potential of culture- and arts-based education to help foster creative talents	
1. Number of hours dedicated to arts and culture in primary and secondary education	"Key data on education in Europe in 2005", by DG EAC, Eurydice and Eurostat, available on Eurydice website: <a href="http://www.eurydice.org/">www.eurydice.org/</a>
2. Number of art schools per million population	European Leagues of Institutes of the Arts (Elia) website: <a href="http://www.elia-artschools.org/">http://www.elia-artschools.org/</a>
• The level of creative talents coming out of tertiary education and in cultural employment	
3. Tertiary students by field of education related to culture	Eurostat, "Cultural statistics", available on: <a href="http://epp.eurostat.ec.europa.eu/">http://epp.eurostat.ec.europa.eu/</a>
4. Cultural employment in total employment	"Cultural statistics in Europe", Edition 2007, published by Eurostat, p.54

OPENNESS AND DIVERSITY	DATA SOURCES
Attitude in population	
5. % of population that express tolerant attitudes toward	EUMC and SORA

<sup>500</sup> Bakhshi, H. et al., *Creating Innovation*, NESTA, 2008.



minorities	
6. Share of population interested in arts and culture in other European countries	"European cultural values", 2007, Eurobarometer 278 requested by DG EAC
<b>Market data</b>	
7. Market shares of non-national European film	The European Audiovisual Observatory: <a href="http://www.obs.coe.int/">http://www.obs.coe.int/</a>
8. Level of Media Pluralism in European Member States	Study on Media Pluralism Indicators carried out on behalf of DG Infosoc <sup>501</sup>
9. Share of non-nationals in cultural employment	Eurobarometer 278

CULTURAL ENVIRONMENT	DATA SOURCES
<b>Cultural Participation</b>	
10. Average annual cultural expenditure per household	Eurostat, "Cultural statistics", available on: <a href="http://epp.eurostat.ec.europa.eu/">http://epp.eurostat.ec.europa.eu/</a>
11. Percentage of persons participating in cultural activities at least one time in the 12 months	Eurostat, "Cultural statistics", available on: <a href="http://epp.eurostat.ec.europa.eu/">http://epp.eurostat.ec.europa.eu/</a>
<b>Cultural offering</b>	
12. Number of public theatres per capita	Data available from relevant national minister
13. Number of public museums per capita	Data available from relevant national minister
14. Number of public concert halls	Data available from relevant national minister
15. Number of cinema screens by countries	The European Audiovisual Observatory: <a href="http://www.obs.coe.int/">http://www.obs.coe.int/</a>

TECHNOLOGY	DATA SOURCES
16. Broadband penetration rate	Eurostat, « Sciences and technology » : <a href="http://epp.eurostat.ec.europa.eu/">http://epp.eurostat.ec.europa.eu/</a>
17. Percentage of households who have personal computer and video game console at home	"Cultural statistics in Europe", Edition 2007, published by Eurostat, p. 142

REGULATORY INCENTIVES TO CREATE	DATA SOURCES
<b>Financial support</b>	
18. Tax break for artists or people who work in the creative sector	"Etude sur les crédits d'impôt culturels à l'étranger », mai 2008, KEA European Affairs, p. 37
19. VAT rates on books, press, sound recordings, video, film receipts, freelance authors, visual artists	<i>Creative Europe</i> , ERICarts Report presented by the Network of European Foundations for Innovative Co-operation, 2002, p.100
20. Tax incentives concerning donations and sponsoring	"Etude sur les crédits d'impôt culturels à l'étranger », mai 2008, KEA European Affairs, p. 28
21. Direct public expenditure on culture	"The Economy of Culture", 2006, KEA, MKW, Turun Kauppakorkeakoulu, p.125
22. Level of state funding to cinema	The European Audiovisual Observatory, "KORDA": <a href="http://korda.obs.coe.int/web/search_aide.php">http://korda.obs.coe.int/web/search_aide.php</a>
23. Level of state funding to public TV	The European Audiovisual Observatory: <a href="http://www.obs.coe.int/">http://www.obs.coe.int/</a>
<b>Intellectual Property</b>	
24. Amount of right collected by authors in music per capita	Available from the International Confederation of Societies of Authors and Composers: <a href="http://www.cisac.org">http://www.cisac.org</a>

<sup>501</sup> Currently developed by the University of Leuven as part of a DG Information Society and Media Study on Media Pluralism Indicators in Europe: [http://ec.europa.eu/avpolicy/info\\_centre/library/studies/index\\_en.htm](http://ec.europa.eu/avpolicy/info_centre/library/studies/index_en.htm) (January 2008).

OUTPUT CULTURAL PRODUCTION	DATA SOURCES
<b>Economic contribution</b>	
25. Values added of creative industries as % of GDP	"The Economy of Culture", 2006, KEA, MKW, Turun Kauppakorkeakoulu, p. 66
26. Turnover in music industries per capita	IFPI website: <a href="http://www.ifpi.org/">http://www.ifpi.org/</a>
27. Turnover in book industries per capita	Eurostat, "Cultural statistics", available on: <a href="http://epp.eurostat.ec.europa.eu/">http://epp.eurostat.ec.europa.eu/</a>
28. Turnover in cinema industries per capita	The European Audiovisual Observatory: <a href="http://www.obs.coe.int/">http://www.obs.coe.int/</a>
<b>Other outcomes of cultural activities</b>	
29. Number of feature films produced per year and per capita	European Audiovisual Observatory, Yearbook 2007 on "Film and home video"
30. Number of recordings released per capita	IFPI website: <a href="http://www.ifpi.org/">http://www.ifpi.org/</a>
31. Number of books published per year and capita	UNESCO, Institute for Statistics, "Culture and Communication": <a href="http://www.uis.unesco.org">http://www.uis.unesco.org</a>
32. Number of design applications per million population	OHIM/Eurostat