Purevdash Munkhtogt
Assistant professor to the «CITI» University (MBA)

MEASURING KNOWLEDGE

Abstract

There are many discussions with regards the measuring knowledge which is a key leverage of the development issues such innovation, knowledge economy, increased competitiveness. Knowledge-intensive value creation process helps organizations to improve their long-term security and survival. So, creating an effective knowledge management forms the basis of successful innovation processes, increase an organization's ability to innovate. The development trend of assets are mostly connected with an intangible assets rather than tangible assets. Therefore, companies are doing much more investment in their intellectual assets.

Keywords

Knowledge, innovation, management, policy, research.

Introduction

The developed countries succeeds on new technology. Concept of new technology is measured using knowledge and innovation. Even though measuring knowledge and innovation is difficult task there can be two measures considered further in this article. These two measures are an innovation, expenditure on research and development and Knowledge Economy Index (KEI). The measures express different views of innovation and knowledge economy in a country.

Expenditure on research and development

Expenditure on research and development as a percentage of GPD is a simple measure of innovation. Figure 1 shows that R&D spending and data are for 2006 in general, except for India (2004), New Zealand and Mexico (2005), and China (2007). (GERD = gross expenditure on research and development; GDP = gross domestic product.) The figure 1 express the developed countries invest more in R&D.

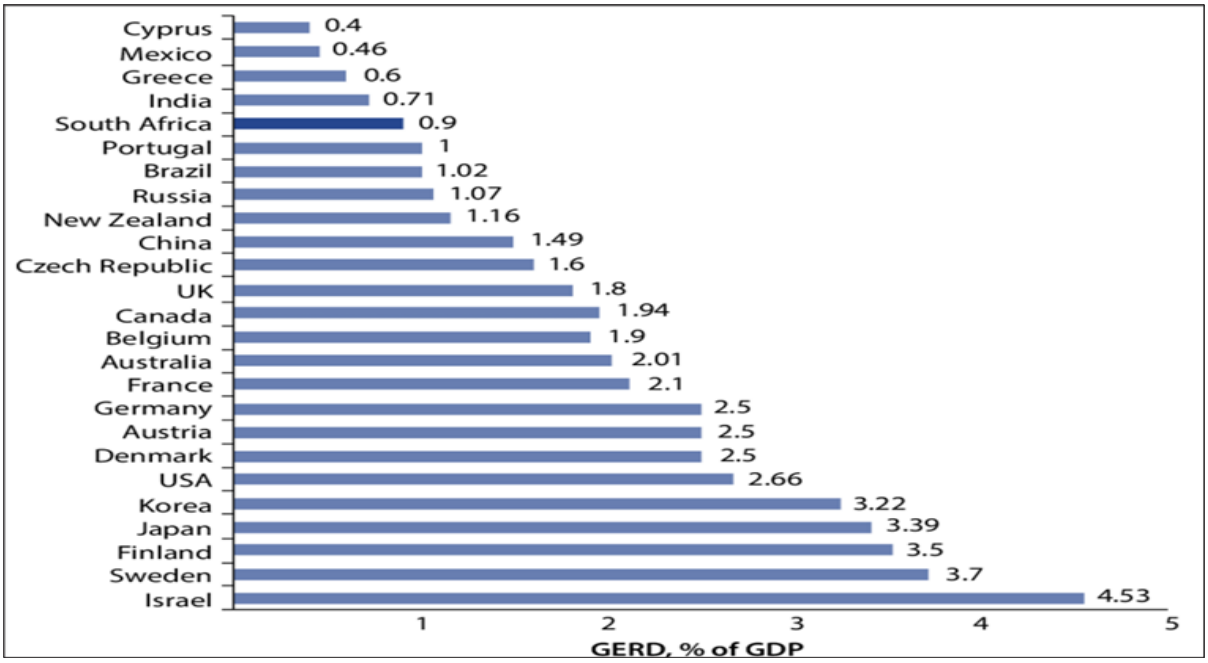

Figure 1.
https://www.researchgate.net/figure/Gross-expenditure-on-research-and-development-as-a-percentage-of-the-gross-domestic_fig1_265609386

In term companies the same trend is shown. The figure 3 shows the most successful companies are doing higher investment in R&D projects.

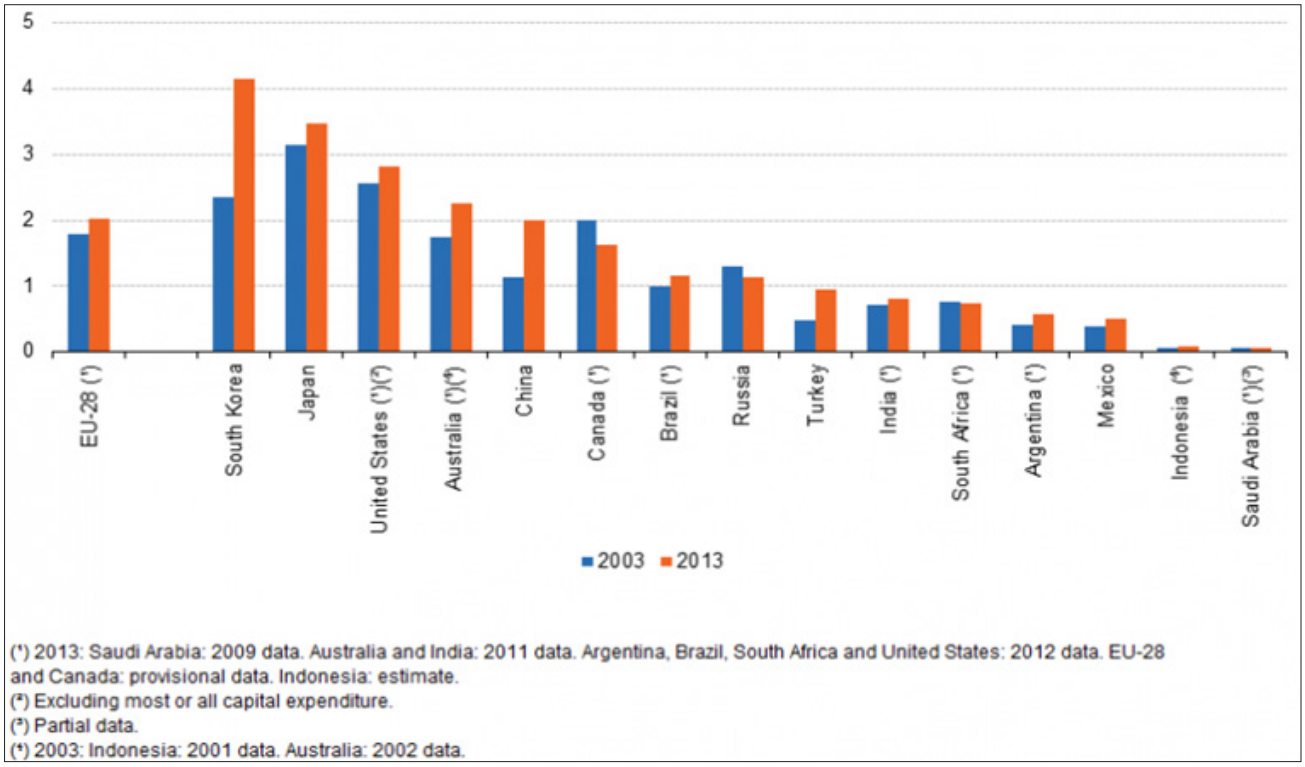

Figure 2.
https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=File:Gross_domestic_expenditure_on_research_and_development_relative_to_GDP,_2003_and_2013.png

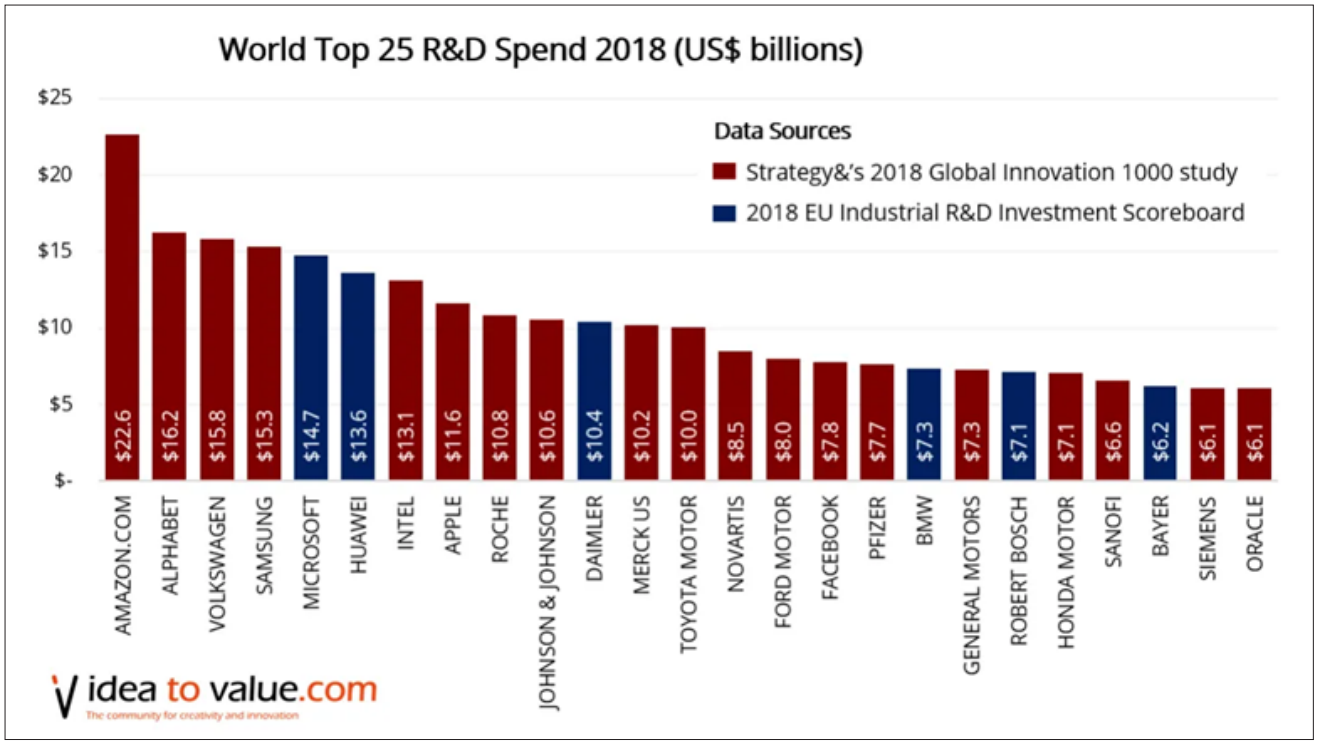

Figure 3. https://www.ideatovalue.com/inno/nickskillicorn/2019/08/top-1000-companies-that-spend-the-most-on-research-development-charts-and-analysis/

According to ZEF Strategy (Bonn, 2015) it is stated clearly about a vision of core research areas with regards governance issues. Out of six research areas the governance and innovation, knowledge and science policy are closely linked to the governance. Especially, the decision making process would be based on evidence.

According to PARI Brief No 7 (Daum T, 2018) historical examples of the United States and Germany about agricultural mechanization policy would help to transfer a knowledge and skills to the African countries providing their approaches and strategies. How public sector support is an advantageous to create a systematic approaches. Therefore the dissertation of Daniel Tutu Benefoh (Daniel Tutu Benefoh, 2018) explains how to assess the land-use in Ghanaian cocoa landscape.

In order to understand a governance and its impact is emerged from ISO[1] standards ISO 30401:2018 Knowledge management standard.

According to ISO organizational structure and its standard development processes «Standards are based on consensus» because there are many working groups composed of each member country. So standards are only confirmed after voting processes. There are so much pressures regarding governance issues such as corruption, constitutional changes, education quality discussed daily in the society of developing countries such as Mongolia.
According to World Justice Project report, Mongolia (data portal, 2018) is ranked at 51 out of 113 countries. So in term of governance, we need to run many projects into the concerned sectors based on prioritization from the worst parts to the least ones.

While looking through certain knowledge fields studies the developed countries' universities are mostly cluster based systems in order to provide a deep knowledge share networks such as America, Germany, UK, Singapore.

According to the paper (Evers, 2008), the importance of knowledge management is considered deeply conducting analysis of both technological and non-technological approaches. Botkin (Menkhoff, 2011) estimated that eighty percent of knowledge is a tacit. So the main task of knowledge management is to create an effective ways to transfer the knowledge. Based on ICT[2] background advantage there could be several initiatives about K-Clusters and K-hubs learning from case studies of ASEAN. Examples are the Silicon Valley, the Hyderabad IT cluster, the Munich high-tech zone and the ABC (Aachen-Bonn-Cologne) cluster in Germany, the MSC in Malaysia.

Asian governments supported by Asian Development Bank have created their strategic objectives about to set up knowledge hubs towards variety of industries such as education, environment, technology and economy. It would be great idea or the initial step running certain number of projects to create K-hub among the universities of Mongolia. Due to its nature of research orientation the universities could implement the systems little easier comparing to the rest sectors.

Knowledge economy index

Measuring knowledge can be divided into two main categories of knowledge economy index and knowledge index. Figure 4 shows that knowledge economy is considered as an institutional capacity mostly for macro economy issues which creates a rule of law. But knowledge index measure is used mainly for organizational learning or competitiveness which helps to create a suitable environment for education, innovation and ICT.

[1] ISO-international standardization organization
[2] ICT-Information and Communication Technology

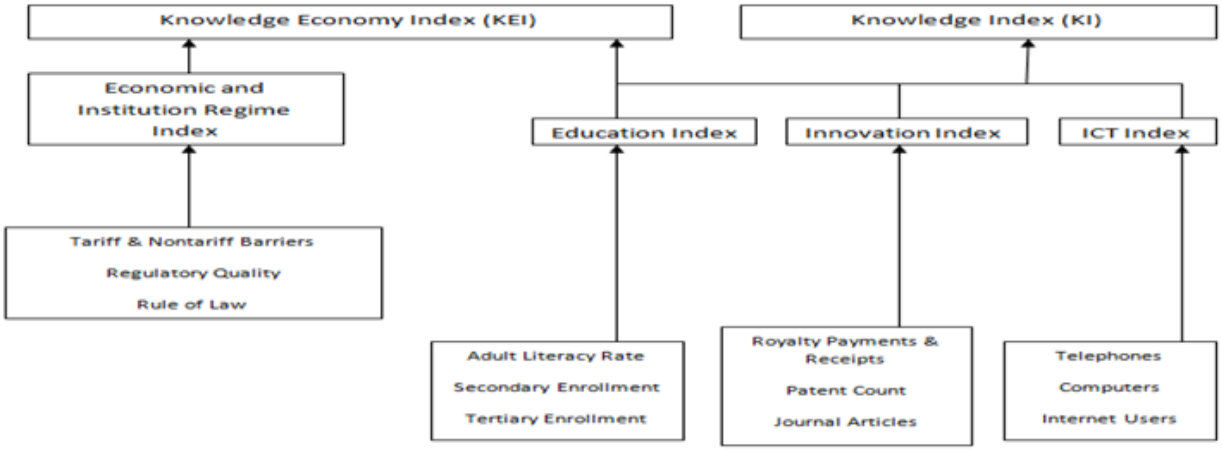

Figure 4.
https://www.researchgate.net/figure/Knowledge-Economy-Index-KEI-and-the-Knowledge-Index-KI-World-Bank-2012_fig2_318005213

To implement a consensus based systems in order solve any social issues in a manner of institutional approach. For example, Mongolia, especially capital city Ulaanbaatar has many problems covering of air pollution, land pollution, clean water lack… etc. So, knowledge economy index would be right measurement to deal with above problems. Lack of simulation tools to analyze data so that a demand of policy based on science is substantial.

While providing a training and consulting service to the public offices what are learned is insufficient research is conducted before any decision making. So the devoir of law implementation is a problem now. According to Anna-Katharina's interview named as «I can build on a very strong team» it is stated that (ZEFnews, 2014) development means «positive» change and different processes are interlinked in order to get a result. Therefore knowledge is can be considered as «development». Based on ZEF strategy and Anna-Katherina policy it is clear that interdisciplinary is a key concept to the development of any country regarding knowledge management. Best practices and standards, programs all should be shared in order to fulfill the SDG goals.

Since knowledge management and knowledge economy and innovation are interlinked together the importance of knowledge study and its impact would be key factor to the development of companies, countries. Great opportunity is to learn both systematic approaches and tools to be used the policy implementation such as open source ((PSC), 2018) would help to decision making of public policies of Mongolia.

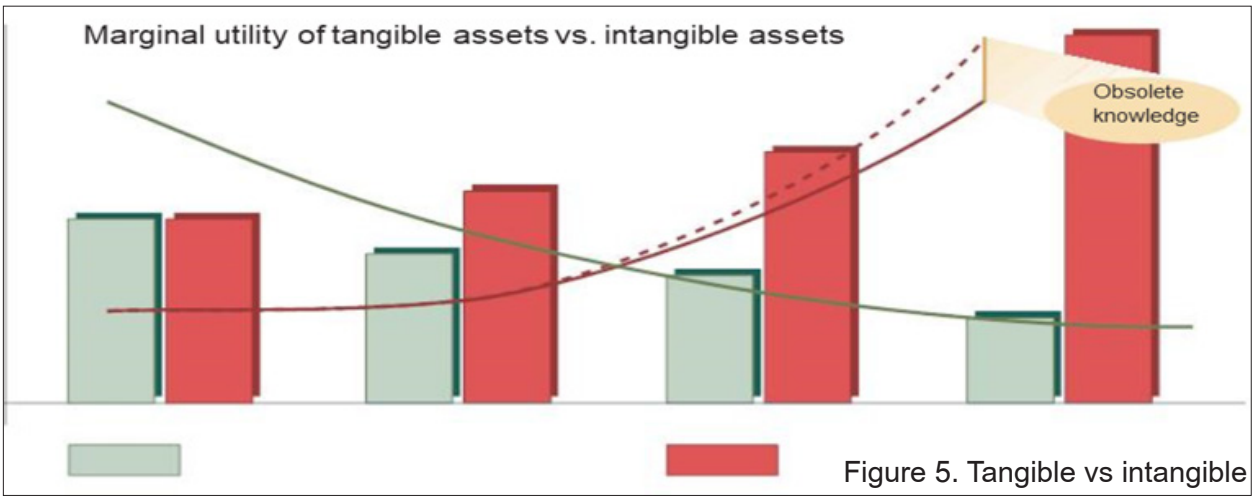

Figure 5. Tangible vs intangible asset

To conclude, measuring knowledge requires new measurement methods using new indicators. Traditional measurement methods are no longer useful. Indicators would be adapted to meet corporate requirements. Innovation, knowledge economy and knowledge management are strategic components of knowledge measurement methods. The result of Figure 5 shows that the trend of intangible assets application has been in progress.

[3]SDG-Sustainable Development Goals

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Манай хамт олноос гадаад харилцаандаа баримталж байгаа зарчим болон хэрэгжүүлж байгаа үндсэн бодлого бол дэлхийн нэр хүндтэй сургуулиудтай солилцооны хөтөлбөр, төсөл хэрэгжүүлэх замаар багш, оюутан, ажилтнуудынхаа мэргэжлийн болон хувь хүний өсөлт, хөгжлийг дэмжиж, үндэсний дээд боловсрол төдийгүй улсын хөгжилд хувь нэмрээ оруулах өндөр мэдлэг, чадвар, хандлагатай мэргэжилтэн, багш, судлаачдыг бэлтгэх явдал юм.

Энэхүү бодлого, зарчмын хүрээнд бид 2014 оноос Европын Холбооны дээд боловсролын тэтгэлэгт солилцооны ERAMUS MUNDUS MOBILITY ASIA / EMMA/ хөтөлбөрийн Монгол Улс дахь түнш байгууллагаар сонгогдон ажиллаж, уг хөтөлбөрийн хүрээнд 30 гаруй багш, оюутнууд Франц, Итали, Польш Улсад амжилттай суралцуулаад байна.

Европын Холбооны "Erasmus Mundus Mobility with Asia" хөтөлбөрийн хүрээнд "СИТИ" Их сургууль дараах төслүүдийг амжилттай хэрэгжүүлж байна. Үүнд:

2013 оноос Францын Ницца хотын Софиа Антиполис их сургуультай хамтран Дээд боловсролын тэтгэлэгт солилцооны Eramus Mundus" хөтөлбөр;
2016 оноос "Их сургууль, бизнесийн байгууллагын түншлэлийг бэхжүүлэх Erasmus+" төсөл;
2017-2018 онд "Ажил эрхлэлт ба мэргэжлийн өсөлтийн талаар их сургуулиас үзүүлж буй үйлчилгээний менежмент" төсөл.
Төслийн талаарх дэлгэрэнгүй мэдээллийг Та "СИТИ" Их сургуулийн Гадаад харилцааны албанаас аваарай.

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