

A report of Mongolia's renewal capital

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Abstract. In a dynamically changing world, a major part of a nation's competitiveness comes from its capacity of renewing itself to fit the global environment. Those resources that constitute the foundation of such capacity is called renewal capital of a nation. Multiple indicators and measures of renewal capital of Mongolia were analyzed and reported here in this present paper. We found that: first, Mongolia needs more regular, large-scale data collection in regard to its national renewal capital, in order to know the directions of improvement and investment; second, while R&D spending and patent usage of businesses need to be stimulated more, scientific publication has potential to grow and contribute to renewal. These results shed lights on the policy making and business practices.

Keywords. Renewal capital, National wealth, Intangible assets, Mongolia.

JEL. M10, M11, M14.

1. Introduction


“**K**nowledge is weightless and intangible like a light, it can also travel easily around the world, make people's life better who live everywhere. But still, billions of people still live in the darkness of poverty – unnecessarily.” (World Bank, 1999)

The way of developing innovation-based economy was not clear. It is researched through a mostly micro organizational level and not in a macro-national level. In today's days, knowledge is the main power of social and public sectors. Research on technology, information interchange, software, etc. in few fields is too limited in scope. One cannot ignore the effect of a knowledge based economy. Social patterns of mindset, ambition, and creativity depend much on the intellectual development level, and define the future of the social development of the system. Besides, development of a nation is directly connected to life environment of current nation.

In our century of information, the survival of companies depends much on how good and fast they use information and knowledge to re-invent things and how we implement things. Over the last decade, intangible assets and intellectual capital are in attention not only in academics or company level but also in the national level. In earlier years, researchers discovered that a nation's intellectual capital can improve a population's income and give them a more convenient lifestyle.

One of the important aspects of intellectual capital is Renewal capital (Lin & Edvinsson, 2011). Every economic policy, and stable development of country are driven to peaceful and genial life for its citizens, there are factors that create an efficient innovation system: first, directions of developing innovation: government policy, main headings of developing social and economics; second, cooperation

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between government and institution: good environment for legislation, way of financial offering.

Mongolians should think that there are many opportunities to live without mining capital. When we face economic crisis, people discuss for many years to transfer from a mining based economy to a knowledge based economy. However, they do little and the result is low. Therefore, the researchers need to pay more attention on the nation's Renewal capital, to bring the nation go toward a new economy and businesses for new operation models. As, the investment into intangible is varied from 2-7% of GDP with Sweden and USA at the top, intangible assets include expenditure for R&D, education and software. In these countries, the intangible investments are more than 60% of total investments. Missing Mongolia is a big mistake because Mongolia ranked after 100 countries by development level, also GDP per capita is only 440 USD. Government economic system is so backwards and processing industrial in the economy is at a low percentage. The unemployment rate is also high at 4.6%, which is high for a 3 million population. So, we really need to conduct research to give growth to efficient social development.

Most renewal capital deal with intellectual endorsement and development of resources that can facilitate innovation activities. Thus the theory of Intellectual capital become an important ground, both theoretically and practically. The theory aims to have specific history, in the ten years of last century showed the critical moment of world development and competitiveness. John Kenneth Galbraith, who made early studies of intellectual capital, he wrote a report to Michael Kalecki who is economist, and he emphasized about how important intellectual capital. He wrote about that he was wondering that people around the world much more owed to intellectual capital for last decade (Bontis, 2011).

In 1991, Stewart stated that intellectual capital is an intangible advanced asset those has been characterized, described and influenced to intellectual raw materials. As Brooking (1996) stated that intellectual capital is essential intangible asset that makes company and organization can able to operate and function in good and innovative way. Stewart (1997) also described that intellectual capital as a packaged effective knowledge that is helpful for everyone especially for the members of corporation to work better.

The great contributor of theory of intellectual capital is Professor Edvinsson who is named as father of intellectual capital, he introduced the first public Intellectual capital annual report in 1994, and encouraged the advancement of Intellectual capital measurement. He is the founder of World's first future center which is area of Knowledge management and Innovation. Edvinsson & Malone (1997) stated that intellectual capital is the property of knowledge, experienced actions, company's culture and technology, consumer relationships, information and essential abilities that give an important space in the marketplace progress and adaptation. Roos & Roos (1997) inspected the intellectual capital in the perspectives of capital-based edge and described intellectual capital as the worth of concealed, imperceptible resources. Furthermore, they state that intellectual capital is the most essential assets that makes much aggressive improvement and development in the company.

All of these have pointed out that under the framework of intellectual capital that is essential for national development, renewal capital that my lead to innovation is one of the most critical. *Renewal capital* thus concern to a nation's capabilities and real investments made to grow its ambitious power in following future markets, that stimulates eventual development. Renewal capital build investments in R&D, patents, trademarks, start-up companies, the number of scientific publications, the number of patents registered, EPO patent applications, total expenditure on research and development, and volume for innovation.

2. Methodology

All referred measurement models of previous studies do not provide an existing long-distance nation's national intellectual capital comparatively of big scale. Mainly, we follow the highly reputable NIC40 models (Lin & Edvinsson, 2011). This measurement model is broadly approved International Institute for Management Development (IMD) collection of data, that include both quantitative and qualitative indicators. The main attention of this thesis is on the most commonly used national intellectual capital framework, containing human capital, market capital, process capital, renewal capital, and financial capital. We relied on multiple sources (e.g., the OECD databases) of data to construct the measure for national Renewal capital of Mongolia. Proxy measures were utilized because of unavailability of respondent data descriptions that caused missing non-updated values.

Table 1. Proxy Indicator for Process Capital

Process Capital Indicators		
	NICI40	MINE
1	Business competition environment	CPIA business regulatory environment
2	Government efficiency	Business extent of disclosure
3	Intellectual property rights protection	same
4	Capital availability	Firms using bank to finance investment
5	Computers in us eper capita	same
6	Convenience of establishing new firms	Ease of doing business
7	Mobile phone subscribes	same

Special instruction. *Patent applications* are worldwide patent applications filed through the Patent Cooperation Treaty procedure or with a national patent office for exclusive rights for an invention--a product or process that provides a new way of doing something or offers a new technical solution to a problem.

3. Result and discussion

In this section, we will present the findings, analysis, and interpretations that derived from the data collected and to produce a meaningful way to facilitate the discussion.

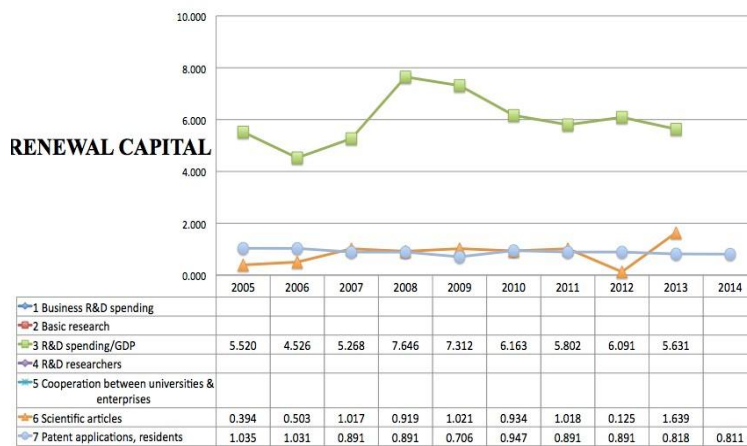


Figure 1. The numbers and trends of Mongolian's Renewal Capital

Figure indicates the trends of renewal capital in Mongolia with R&D spending/GDP having the highest score (7.646) and the lowest score from Patent applicant (0.394). Similarly, to market capital, four of the seven indicators' data are missing (Business R&D spending, Basic research, R&D spending and Cooperation between universities & enterprises), thus allowing the trend of R&D spending to

illustrate good potential for renewal capital as the scores in each year are the highest of all the indicators.

Why don't we couldn't find those indicators or what is the reason it is neglected by researchers, do the government take attention on those indicators? In 2010 the prime minister of government, Batbold was talking about Silicon Valley of Mongolia which concerned with all Mongolian universities are centralized in certain place and skilled students are recommended to companies straight out of universities. But still those things are spoken by today's another chosen prime minister, Ch. Saikhanbileg. Even it is spoken and planed there is obstacles arising as financing, also in the country there is not set of infrastructures of the field. Researchers of Mongolia discussing about if we compare the speed of technology world to Mongolia is liker rabbit and turtle. However, Mongolia always looking forward to developing in this field, just need to know where to and how. Need more support from government such as financing and curtain policy, program and projects. They started project called "Silicon House" from National Park of Information & Technology, the mission is centralizing all the information, sales, purchases, introduction of production of national Information and Technology. The main barrier of this project is funding, government supposed to spend 2% of budget but, it's 0,7%. To develop successfully the science and technology sector they need to have long-term stable funding and continuity support from government as researchers said. Nevertheless, it is hard to continuity of support from government because it depends on much from election year and promises of candidates who want to be voted, after election everything is changed even the leader of project will change.

Scientific articles demonstrate the lowest scores. Nevertheless, both indicator's scores show a positive trend in increase. But between year of 2012-2013 there is sharp increase, it might be increased because of the government of Mongolia has adopted the Master Plan of Science and Technology with support of UNESCO during period of 2007-2020. Also, they adopted "National innovation development program" (2008-2015) within framework of the Master plan of Science.

4. Conclusion and suggestions

Even Mongolia is developing country, and we live in 21st century and we do have opportunities that can improve our innovation system and intangible assets. But without our government policy and financing support we can't move much further and can't walk with world's development. This descriptive study is designed to disclose Mongolia's renewal capital and allow the government to get more effective policy management of intangible assets and identify the success of economies. Our results revealed that Mongolia don't have a very sound renewal system which could convert information towards property and tangible resources, but is potential is trying to think deeply of the following points.

Firstly, government should give more freedom and support to scientists.

If Mongolians turns money into knowledge by verifying degrees in universities, maybe they can modify the knowledge into money, value and startup businesses that can stimulate innovation and continuous renewal. The authority can try less intervention for scientists, researchers and entrepreneurs transforming their knowledge to valuable technology or money. Innovations proposed by skilled human always need social and economic resources, as well as governmental supports in constructing a renewal system in public.

Secondly, Creating free competition

Sustaining loyal contest will build great teamwork with private and public capitals. It will also establish foundation aspect which assist to innovation and develop the surroundings for high educated labor force. Nation's market would commonly request environmentally friendly technology so the government should support with the transparency in keeping intellectual property, transmission of technology and usage of authorization. Also, a main stream of research and development, open laboratories, and technology incubators that can integrate many

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companies and learn from each other, are all welcome. Investment attraction and exemption of tax are both important to offer space for renewal of the nation's intellectual and economic systems.

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