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Global Trade and Technology as Indicators of Competitiveness and Economic Development: A Study of Pakistan's Position in International Market

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Abstract

The idea of competitiveness has been broadly accepted and has turned into a part of debate in international forums. Today world-wide economy cannot be enlightened by using the same approach without innovative technology as it was a few decades before. When progresses of the firms and states are observed, public generally regard international competitiveness as critical part of the debate. The study in this paper attempts to evaluate position of Pakistan's economy with the perspective of International Competitiveness in terms of its technological development and trade progress. It's concluded that export markets can be strengthening by the countries with the passage of time. There is crucial requirement to improve their technological progress and governance. Pakistan is passing through the stage where there is need to employ the standards of international competitiveness. The study is sum up by explaining a suggestion to government of Pakistan with the key highlights that higher technological exports will comes true only by intensification of research and development via investment in the human capital of the economy. This entail mutual efforts from three major players; individuals, business entrepreneurs and government.

Keywords: International trade; Technology; Competitiveness; Research & development.

1. Introduction

The idea of competitiveness is being broadly evaluated and has turned into a debate part in international forums. Today's global economies might not be enlightened by using the similar approach the way it was employed a few decades afore. When progresses of the firms and states are observed, public generally regard international competitiveness as critical part of the debate. If firms faces decline of shares in global market, it is due to the lack of international competitiveness. When an economy's current account balance reflects a deficit, poor international competitiveness of the nation is place ahead (Nurbel, 2011).

Progressive competitiveness of the nations is a key requirement of the time and their capability to contend at global marketplace is of significant matter. Problem begins from the belief that the primary goal of a country is not the current account's growth, rather the growth in the real incomes of its natives for which the progress of the domestic productivity is the essential theme. Alternatively, we should remember that nations do not contend with each other the way firms compete with one another. The correspondence between the countries' competitiveness and firms' competitiveness is not real (Krugman P., 1994; Krugman P. R., 1996).

On the basis of comparative advantage, primarily the majority of the economists tries to explain the notion of global trade and then turns into a recent theory of trade. In this paper, the study attempts to evaluate International Competitiveness place of Pakistan's economy with the viewpoint of its technological advancement and exports development. The major emphasis of the study is to recognize the importance of the concept of *competitiveness* and to investigate position of Pakistan at International marketplace. Concluding the remarks about what kind of lessons economy of Pakistan should consider important to learn from newly emerged economies.

2. Literature Review (Theoretical Background of Study)

There was most disrupting as well as strongly argued conception of competitiveness firstly introduced by Porter (1990). He offered awareness about how could a country strategically can play a game and might be successful in attaining greater level of revenues involving in trade, by implementing new theories of trade. The comparative advantage theory by Ricardo (1817) added a new aspect as Porter (1990) emphasized on the development of comparative advantage and/or innovativeness through improving to sustain greater segments of market. Therefore, productivity idea could work to attain greater amount of global competitiveness materialized.

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Indices based on productivity are extensively used in the measurement of competitiveness. As per Porter point of view, the most valuable thought in international competitiveness is productivity. The absolute index of productivity that imitates benefit is said to be Total Factor Productivity (TFP) and an economy whose industries maintain at average level of Total Factor Productivity more than her competitors maintains known as competitive economy. TFP is the determinant of efficiency, development, and growth as a whole.

A nation's competitiveness can also be measured by its indices which demonstrate the exchange rate management and trade performance. Furthermore, the Purchasing Power Parity (PPP) of a nation's currency and the real exchange rate (RER) are the necessary measures for the assessment analyzed by financial analysts and economists about the competitiveness. Structure (goods and their desired end points) of commodities, exports development and its dynamics, along with domestic trade, attentiveness, awareness, awareness, complementarities, comparative advantage disseverments are mainly includes in these indices.

As for concerned with this survey study, the concepts, explanation and the competitiveness measurements are the major concerns to evaluate further in order to measure Pakistan's position in the region.

2.1. Understanding Competitiveness: An Overview

The beliefs about competitiveness have been disrupting and stays connected with the two limits, either of microeconomic or macroeconomic concerns. Krugman P. (1994) explains that only firms contend for exports but not the countries. (Lall and Albaladejo, 2003) put emphasis on that nationwide competitiveness is an actual matter that could be explained and evaluated. Start changing from lower technology to the higher technology is not an easy procedure that concerning with many interventions in policies and rules.

(Krugman P., 1994) argues that the idea of competitiveness may not be considerable and appropriates from its hazardous obsession. Though, it's unsafe while implementing to the national markets. His remarks and influence in strategic trade theory development frequently linked with the competitiveness was broadly observed. He believes emphasis of competitiveness on trade balance that deviates from the growth factors in productivity of domestic economy. Due consideration in competitiveness debate has been devotes to the global trade. Besides, investment in global trade, technology and human resources were also providing significant prominence which is core essentials for productivity. (Krugman P. R., 1996) disagreement consist of numerous points; nations are not same as companies and every correspondence between them is ambiguous, productivity is not clarifies by competitiveness and does not present reasonable ground for public policy (Fagerberg, 1988).

World Economic Forum (WEF) defined it as *Competitiveness* is associated to the group of organizations, factors, and rules that determines the level of productivity in a country. Main insightful description of competitiveness is a share of an economy for its goods in international market. This creates competitiveness as zero-sum game due to gain of one country raises at a cost of other countries (World Economic Forum, 2005).

Productivity explained the real competitiveness of the economy. Productivity is a variable that permits an economy to maintain higher wages, healthy money and handsome investment returns along with a better living standard. Global economies are not at zero-sum game whereas various countries might able to expand their richness level if they would start improving productivity (Schwab, 2015).

Competitiveness described as a set of elements, institutions, and policies used to establish the amount of productivity of the nation and hence, manage the smoothness and prosperity that could be assessed from a country (Schwab *et al.*, 2014). Productivity is a key determinant of rate of returns on investment which in turn, reflects the growth rate of an economy at its aggregate level. So, a better competitive nation is the one that is expected to develop more rapidly beside the way to long run.

There are two dissimilar concepts of production efficiency; relative efficiency of manufacturing exportable goods and absolute production inputs cost related to the other countries. Competitiveness doesn't showed by relative efficiency as a whole of different countries rather it clarify the paths of global specialization of production whereas absolute cost of production defined by what means countries are successful in global marketplace for specific goods (Bell *et al.*, 1995).

3. Recent Indices of Competitiveness Measurement

Competitiveness is a many-sided situation and not easy to sum up in a particular catalogue. The yearly summaries of World Economic Forum in collaboration with International Management Development employ a vast combination of factors (qualitative and quantitative) for the sake of measuring competitiveness. Data is being structured in indicators, factors and sub factors that allow summing up competitiveness in a single index. Report of World Economic Forum "The Global Competitiveness" is publish and issued yearly from 1979. At the beginning it consists of only 16 economies and its newest version circulated in 2016-2017, the analysis is being extended to 138 nations. The Global Competitiveness Report represent the progresses and accomplishments of participant countries and provides a depiction of selected countries regular accomplishment of normalized per capita GDP as well as demonstrates the differences in per capita GDP among various countries.

In the network of Global Competitiveness, major intuitions concentrate on various factors that decide productivity level of a country. These factors matters in a different way among different countries subject to their phase of growth, the relative significance of these variables vary with the passage of time. The newly established four competitiveness indices being used in our paper to identify our position in international market which are highlighted in Global Competitiveness summary report "World Economic Forum 2016", World Industrial Development Report UNIDO 2016, World Competitiveness annual book 2016 issued by International Institute for Management Development and finally the Global Manufacturing Competitiveness Index 2016.

As per Global Competitiveness Index, following Table 3.1 presents an indication of counties ranked from Top 1 to 10. Whereas Table 3.2 show a ranking of some selected countries.

Table-3.1. Global Competitiveness Index: (Top 10 Countries)

Country	2016 Ranks	2015 Ranks
Switzerland	1	1
Singapore	2	2
United States	3	3
Netherlands	4	5
Germany	5	4
Sweden	6	9
United Kingdom	7	10
Japan	8	6
Hong Kong SAR	9	7
Finland	10	8

Source: World Economic Forum (2016).

Table-3.2. Some Specific Countries

Country	2016 Ranking	2015 Ranking
Norway	11	11
Taiwan	14	15
Ireland	23	24
China	28	28
Thailand	34	32
India	39	55
Turkey	55	51
Lao PDR	93	83
Bhutan	97	105
Pakistan	122	126

Source: World Economic Forum (2016).

The Global Competitiveness Index is calculated for 138 economies in 2016 and global competitiveness positions are specified. Switzerland ranked as top as it is one of best competitive nation of the globe, whereas Singapore is at second, United States is at third position. Switzerland's top position reveals its capability of innovation and existence of its sophisticated environment for business (World Economic Forum, 2016).

Among some Asian economies like Singapore, maintaining its position at second, Japan is at eighths, Hong Kong is the ninth candidate whereas Taiwan is at fourteenth. All these countries possess higher excellence of infrastructure, healthy/skillful workforce with efficient markets l (Global Competitiveness Report, 2016).

Thailand and India are classified as thirty-fourth and thirty-ninth respectively and exposed high marks if compare to various other Asian countries due to their potential in terms of knowledge and superiority of firm's operating efficiencies. Technology utilization by firms and rates of technology transfer are seemed to be higher, but the diffusion rates of using modern technology are quiet low as defined in international standards. Pakistan is categorized at one hundred and twenty two in Global Competitiveness index 2016-17 and comes along with poorer performers due to the deficiency of good quality control. The country have revealed reasonably stood at low rank in entirely nine pillars of competitive catalogue particularly in medical and basic school education, macroeconomic sectors, training and development, and in other technological aspects. The Global Competitiveness Index 2016-17 demonstrate the countries at lowest in the list is Chad, Mauritania and Yemen (World Economic Forum, 2016).

3.1. Technological Progress and World Market Trends

Technological progresses in recent years have observed in International markets. A general assessment of technological progress is noticed as research and Development expenditures as proportion of total GNP. Technological concentrated activities are growing more quickly than some other activities since they offer higher productivity, prospective for continuous learning, and extent of FDI that present immense potential for exports. Nations can reinforce to export markets through changing from simplest technology to the superior advancement of technology. However resource based products using low technology is initial stage for creating competitiveness for the developing economies, however, trends of international market recommends that there is also need to encourage structural transformations. The economies that preserve higher volume of export development has improved their industrial composition of production with exports (Zia, 2016). Technological groups normally classified with respect to products are as following,

- *Resource Based/Primary*
- *Lower/Light Technology (LT)*
- *Medium/Average Technology (MT)*
- *Latest/Higher Technology (HT)*

A report of ADB describes about exports using category of technology by giving explanation of the regions taking share of international market. There is seems to have a prominent increase of East Asian countries using

higher technologies (HT) than goods being produced using medium technology (MT). Singapore, Malaysia, South Korea, Philippines, Thailand and Taiwan have revealed significant growth in using high technology (HT) and of medium technology (MT) exports (ADB Institute, 2004).

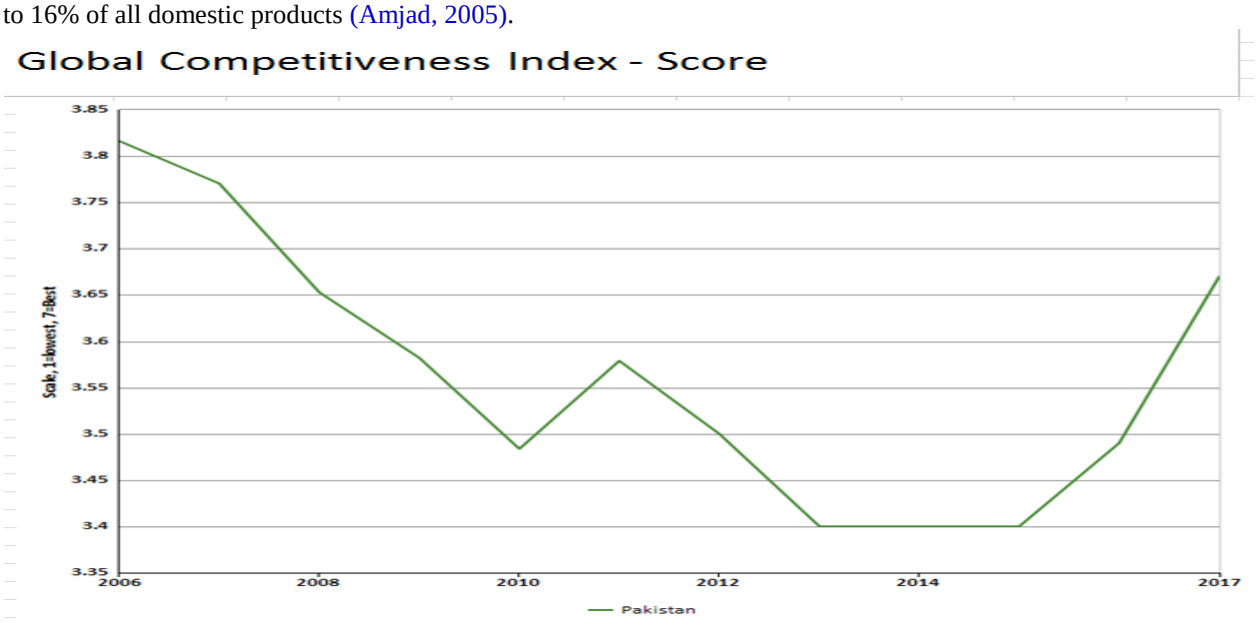
Various emerging economies such as South Korea, China and Japan formed their national competencies in adopting latest technology. The extend of abilities were determined in the initial stages through the introduction of active development policies, with the limitations on inward foreign direct investments (FDI), security of newly entered firms, provision of credit, strong back-up with the domestic research & development and professional skills (Lall, 2001).

Economies with no well-built domestic capabilities have turn into main high technology exporters. They give concentration to combined production processes, primarily via execution of comparatively simple manufacturing. Lot of economies has controlled to promote their part by means of changing into better national prospect, design planning for development, a regional level marketing and so forth. Country like Singapore has significantly reflected for more sophisticated electronics, in the company of remarkable design competencies and rising local connections. On the other hand, some nations such as the Philippines and Mexico are yet concerning the circumstances to value succession. There are certain Latin American countries like Argentina, Brazil and/or Mexico are the sound cases of compound Medium Technology exports directed by Auto-industries (ADB Institute, 2004).

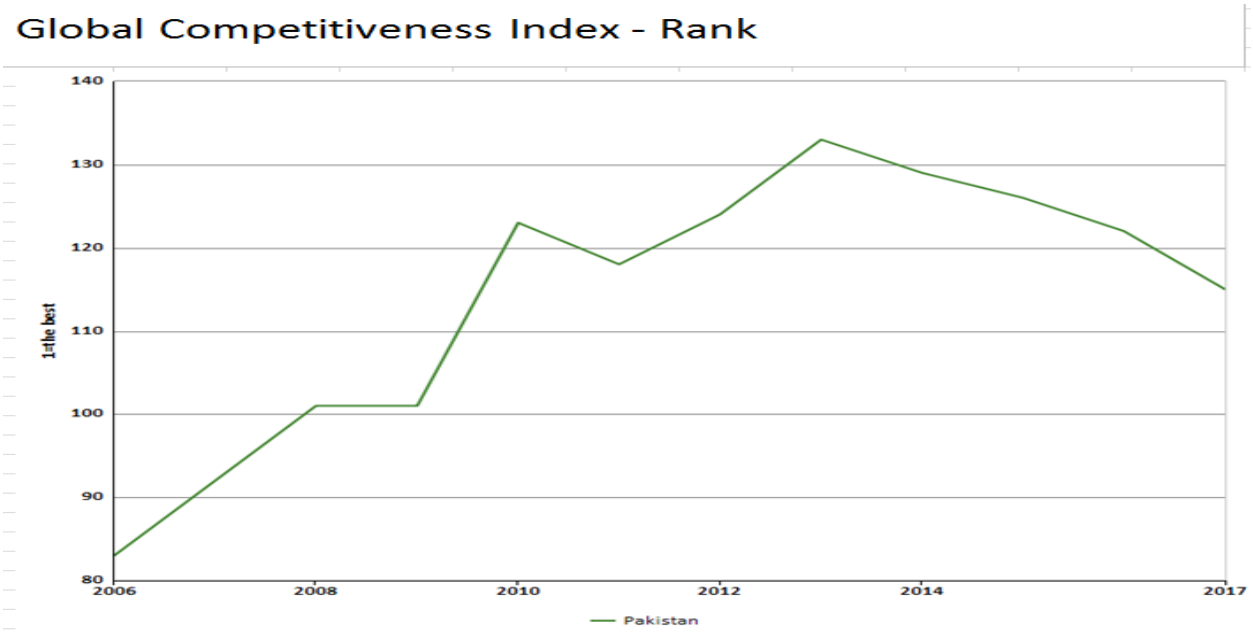
East Asia is leading in high technological commodities. South Asia is gaining its share of market in all segments, specifically in lower technology and resource centered goods. Although in both by global standards, it ruins a diminutive player (Lall and Albaladejo, 2003).

4. Analyzing Technology and Competitiveness Position of Pakistan

Position of Pakistan in competitiveness is assessed by evaluating various findings of some current studies. Share of Pakistan in entire world exports has decreased from 1990 to 2002. The share in world manufacturing exports has stayed stagnant at point 0.19 percent. Several developing economies such as Thailand, India, China, and Malaysia is showing a prompt growth of exports sector in the current phase (Sakib, 2004). Heavy investment from Pakistan has made to set up used for post MFA system and demonstrate remarkable achievement during 8 months of 2006. In reference of the cotton manufactures export, export share in the market of US has improved up to 13% but the market share in EU has dropped by about 15% (Schwab, 2015). Regardless of holding technological, economic, and structural development, economy of Pakistan stays dependent in the production and processing of cotton. Greater than 70% of Pakistan's export is depends on cotton related goods. The contribution from cotton products is about 11 to 16% of all domestic products (Amjad, 2005).



In export sophistication Pakistan's scores are quite low. These low scores reflect its supremacy in low technological products. The capacity of Pakistan has limited in latest technological areas such as in scientific and R&D in relevant areas. Having small share in its technological concentrated goods and remained fail to elevate it, Pakistan's exports stayed concentrated in lower technological areas. In accordance with one estimate studied in 2002, 75% Country's export was associated with low technology. Sri Lanka possess a healthier technological exports profile as compared to Pakistan's exports (Schwab *et al.*, 2014).



Pakistan is facing disregard in human/social capital and skill development, Harbison Myers skills Index and Global Competitiveness Index showed a major drop in R&D specially expenditures on education. It is also surprising to notice that Pakistan is below compare to Nepal and Bangladesh. As a valuation of productivity methods with some related countries demonstrates that projected per capita MVA (manufacturing value-added) of Pakistan is lower than China, Philippines, Thailand, India and Sri Lanka. Manufacturing at large scale, the progress in private investment is very slow that is one of the main limitations in the growth process of economy of Pakistan. Per unit wage cost of Pakistan is greater than major other related economies. Basis for fewer businesses promising environment includes higher business costs, insufficient provision of infrastructure, political instability, undesired and poor regulations from government.

4.1. Potential of Pakistan's Economy

The exports sector of Pakistan demonstrates a small amount of areas of prospective opportunities above all in Clothing and Textile division. Unluckily, it has already been explained and observed that the majority of the exports of the economy are characterized by low technological production processes which influence largely the essential competitive performance on board. Exports of Pakistan improved at a multiple rate of growth by 13.8 %, rising from $10.3 billion in July to December 2013 to $ 15.5 billion during first nine months of year 2016**.** The Major growths in exports are coming from Clothing and Textile (C&T) sectors. Exports of Pakistan's economy have promoted by the elimination of the quotas on import enforced by developed nations. Reliance of Pakistan is resting on low technological C&T region, by means of low obstacles to entrance of new participants. This enhances the susceptibility of export incomes in the Agreement on Clothing and Textile (ACT) of quota free system. Dependency of Pakistan has stays on exports of textile section is a lot more than value addition from cloth section. An encouraging object is the tendencies that perceived in T & C of Pakistan export at the outset, overtime there is noticing a keeps on greater value-added production processes within the T&C field. Furthermore, Pakistan has revealed constructive growth rate in the categories of different products that are mostly from quota free exports sector (World Bank, 2006).

4.2. Benchmarking and Improvement in Competitiveness

There is a well acknowledgement about the fact that competitiveness is a capability of firms to capture benefit of prospects presented by world development, and the competitiveness approach is a reaction of domestic governments about this dilemma. Public sector of numerous economies is being questioned about the problems of competitiveness and what governments preserve to do in order to assist its enterprises as long as possible. Interventions of Government to the matter have to employ macro and micro-level programs, human capital investments, R&D providing innovative technologies are the necessities of the time. Although this could come up with the desirable outcomes if ended by significant short run and long-term targets of the nation. This initiative is hold up by *Benchmarking* the current weaknesses and strengths of the economy. Benchmarking entails assessment of performance from industry in home and export marketplace. The key macroeconomic and strategy development, technology, human resources, physical & social infrastructure, FDI, finance and other supportive institutions are reflected as major factors of performance demonstration. The estimation might be use the qualitative parts and can also involve quantitative features of the institutions (Krugman P., 1994). Subsequent to the benchmarking; the main concern is provision of resources at different level. The government must have to formulate assured decisions at sector-vise and sub sector-vise stage and make it clear that which regions have to support. The procedure continues by permitting good performers to come out in the variety of activities that grasp long run technological progress and economic development. These actions are acknowledged since groups of interconnected business actions which shares prosperous technological externalities that uses the accessible support of skills and capabilities, helps to build

up superior backward connections and endure competitions domestically and globally (Nurbel, 2011). These groups can perform a significant function in emerging economies; certainly Pakistan has no exclusion about it. Moreover, it has already been perceived that groups are obviously developed geographical/regional attentiveness of the firms and significant prospect they obtain is nevertheless to be realized. Under British decree a small number of groups stood developed in Pakistan but do not specified a sincere concentration later on. The major groups are includes, Garments Lahore, Jewelry Karachi, Cutlery Wazirabad, Leather Karachi, Gems and Fans-Gujrat (Zia, 2016).

5. Lessons from Emerging Economies for Pakistan

This has been perceived from the evaluation of emerging nations that there were no particular models, every nation applied and experienced diverse models in relation to their economic underperformances in the economies. However, number of interventions was implemented by those countries in order to achieve certain objectives. Through analyzing modern growth intermediations an opportunity could be prevailed to recommend particular directions for the Pakistan's economy. Presently specialization of Pakistan is in lower technological goods and thus technological concentrated exported products are extremely stays behind from the objectives. Primarily, Taiwan has adopted the similar approach although overtime the economy has succeeded to make extraordinary development thru bringing mutually public-sector research foundations and firms. Superior technology was driven on by the research institutions, after that they have implemented at firms level applications of the technology. Sophisticated and technological concentrated exports products are more wanted. Similar approach can be work in case of Pakistan by means of research institutions are obtaining competitiveness in the economy. There is enormous bunch of talent available. The government of Pakistan must commence private public affiliations to create employment in Research & Development and need to promote talented people to participate. An overseas support could be availed to provide training to the new human resource. The state can commence several combined projects with developed economies for the progress of the technological development in the country. At present, Pakistan is not a strong player; however, with appropriate strategic interventions from the government authorities can push the country towards technological development. In order to adopt and implement latest technology, Pakistan is required to have larger investments and reformation of industrial zones. The assessment of emerging nations come up with a common strategies implemented entirely of them were private public affiliations and desired interventions from the government.

5.1. Conclusion and Recommendations

A depiction of competitiveness of Pakistan's economy connected with its export performance in presence of level of technology used has been explained in this study. As a conceptual study, the notion, description and evaluation of competitiveness has been analyzed and passed on further to observe the trends of global market. Competitiveness is associated with the technological development and exports progress of different countries (Khalil *et al.*, 2017). Export performance in terms of technology intensive position of Pakistan is examined as key concern of international competitiveness in world market. It's concluded that export markets can be strengthening by the countries with the passage of time. There is crucial requirement to improve their technological progress and governance. Primarily developing economies can initiate from lower level of technology as besides in case of Pakistan, however overtime it becomes essential to transfer from primary to more sophisticated technologies. Competitiveness of a country can be elevated with the help of technology intensive activities. Pakistan is passing through the stage where there is need to employ the standards of international competitiveness. The study is sum up by explaining a suggestion to government of Pakistan with the key highlights that higher technological exports will comes true only by intensification of research and development expenditures via investment in human capital of the economy. This entails mutual energies from the major players such as individuals, business entrepreneurs and government.

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