

Social science in crisis: A technology development perspective

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ABSTRACT: A successful industrial economy based on Technology products in a country like Germany is based on consistent methodologies, practices and a steady stream of innovative dialogues from different disciplines of science including humanities. This paper will highlight the importance of social science in the development of an industrialized concept and the sudden decline of social science in the current school of engineers and technology managers. The work is based on Europe's leading applied research organizations. The author has worked over 14 years in senior strategy development of new services in technology and in the last 2 years actively worked as a Head of management focusing the importance of social science in design and development of technology. This publication discusses the crisis of social science in today's disciplines and the impact caused to the general society due to lack of social science training.

KEYWORDS : Industrial Economy, Social Science, Technology Transfer, Crisis

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INTRODUCTION

Technology and pure science are distinguished, and the social institutions that play a role in innovation are classified as frontiers [1]. Science and Technology is considered historically successful with what scientists do to facilitate our society with less or no history and culture of science. Technology scientists indirectly influence social processes including subjective norm, voluntariness and image with cognitive instrumental processes including relevance, output quality and ease of use [2,3]. Research Institutions in Europe are magnanimous organizations that govern different institutions set in different locations, implement governance policies and monitor them carefully for any irregularity. Within any governance perspective, social science is an essential element [4,5]. The term governance is directly linked into social science [6]. The scientists involved in technology development however miss the link between social and technology development. The argument in the last decade is that the economy, science, politics and society are becoming increasingly internationalized and interdependencies among these sectors and different markets are growing. Any technological innovation or product is now made not for the local end-user but for a market, which might be in South-Asia. Different markets translate to different cultures! The worldwide development forces technology managers to shift their design according to the needs of different cultures. China is an example of value chain highlights in manufacturing [8]. The design and engineering team values the end user and accordingly the manufactures. Does it mean that Chinese Manufacturers are stalwarts compared to the famous German engineers? The main concern is that in years the researchers claim a series of methodological tools to claim access to social relations [11]. It can be said that following Abbot's [12] insistence of the way that professional expertise is constituted by its practical abilities to diagnose, that it was the practical devices that social scientists developed that commanded interest.

TECHNOLOGY DEVELOPMENT IN A SOCIAL CONTEXT

The team involved in this research was instrumental in supporting German technology companies entering Indian domestic market namely, household appliances like washing machine. German Engineers are famous in developing washing machines for over 3- 4 decades while Indian households embraced these machines in the last 5-7 years. Despite the core technology being the same, familiarization of a new market or de-familiarization of the existing market needs social inputs. The main system function is to clean textures with water and detergent, the textures used in Indian middle class and the temperature involved in washing dresses needed technology localization. The localization effect is not purely technical, but involves cultural perspectives and local knowledge [14]. Within the portfolio of the research group, several technology companies benefitted in entering a new market based on such innovative approaches based on cultural management.

Technology managers are in stress to deliver, but not interested about the end users as, there is a missing link between the corporate strategy and the production strategy [15]. Demands co-exist within an agency like the super-ego, for instance, which are diverse, conflicting and disorderly [18].

THE MISSING LINK

Several manufacturing literature in technology development indicates a missing link between corporate and technology leaders. In my tenure at research organizations in Europe, senior management hardly can express the output except in terms other than return of investment. Technology leaders link their output to training received by their own capacity. Technology leaders are hired on the basis of engineering degrees and technical expertise; they do not exhibit the need to understand the logic of business, post-production. The problem with this kind of sociology is the way that it can

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become unwittingly complicit in visions of social change, where the past is mobilized in pursuit of a narrative account seeking to identify the present through its relationship to a possible future [15]. In the example of washing machine, there was a clear advantage of understanding different social matrixes to enhance growth in technologies which might not have significance in Europe. The main purpose, however, beyond implementing social science in governance is to maximise research benefits with practical implications gathered from society. There are some research organizations that provide successful training and development in the 3 facets of the organizational culture namely bureaucratic, innovative and supportive, but in my opinion, it fails miserably in examining the relationships of technology and social science within the employees. Socialization is confirmed as the link between the person and the organization; future studies could examine how the socialization area connects people, organization and social groups not only with traditional data but also with practical implications [16].

THE DEPICTED "CRISIS"

For Savage and Burrows, the crisis of social science started early 2005 mainly due to methods and evaluations procedure [15] Goldthorpe and Lockwood [8] narrated a speculative article about the implications of affluence for the working class in *Sociological Review*, they were summoned to the Department of Science and Industrial Research and given a large research grant on the spot – no peer reviewing required – to fund them to carry out a survey, which led to the most celebrated sociological study ever. The imminent crisis of empirical sociology was carried out in Britain [8]. It is not, therefore, that in the past, there was unthinking deference to academic authority (for other example, see Dirks, 2001[22], on anthropology's role in Indian colonial government, or Mitchell, 2002[23], on the role of the social sciences in constituting the Egyptian 'economy' during the 20th century). It was actually that such social scientists fostered and supported research 'technologies' which allowed access to the 'social' in ways, which a range of interest groups found valuable. This is the social role of sociology, not in terms of its ideas or theoretical schools or the stature of its leading spokespeople, but in terms of the importance of its empirical research technologies [11]. In an applied research perspective, consolidated fundamental research has generated enough evidence of technological surge and it has guided interesting analysis of data for futuristic design of new research concepts. Aerospace engineering is an example of using stipulated data collected 40-50 years ago. While methodologies identify the shortfall and crisis of social scientists, my argument leads to a length where importance of data and multidisciplinary involvement of academics is not highlighted in the literature. Validation of data is a topic many companies and research institutions are working and the data set collected to validate is humongous. A new scientific field has evolved, namely Big-Data. If the argument of Savage and Burrows is valid, BIG-Data must also use matrixes, which are designed using fundamental research methodologies. There is less space here to explore in detail about that.

ACADEMICS OR COMMERCIAL AGENCIES FOR DATA COLLECTION

Multi-national companies and large research organizations rely on information and data handling for research and development from different sources. Commercial agencies collect data using different set of parameters and they normally work with a strict deadline and for a specific demand from a client. It is a historic but never ending battle between academics and commercial agencies, as one is fighting for words and other for numbers.. There is a significant balance in preparing the study and acting according to the needs of the client in any commercial set up. Academic preparation usually is rigorous and there might not be any specific need other than proving/disapproving an existing theory. Market researchers value a lot in criteria and they term as the "best" indicator. As the objectives are very different in both academic and commercial research, it is difficult to provide a clear-cut advantage. In my argument for this specific article, I notice more significance in market data as the usability of data is quantified and the end user is interested in the outcome. Nevertheless, there is a competitive advantage depending on who has the information and who is able to make use of that information [17]. The information or data is available in safe hands with the academic organizations. The impact of usage of such data is questionable.

SOCIAL SCIENCE IS IN CRISIS OR TECHNOLOGY SECTOR IS IN CRISIS?

In 2012, the European Commission published a new industrial policy communication [10], which starts from the premise that "Europe needs industry" and sets out a roadmap for re-industrializing Europe, with the aim of "raising the share of industry in GDP from the current level of around 16 percent to as much as 20 percent in 2020".

Developing countries like India and China are bullying the European nations in establishing open campaigns like "Make in India"[20] to attract EU companies to manufacture in India and reduce cost. As a European entity, why should our machines be made in India, why should we lose jobs to India and China to manufacture, whereas the new EU migrants like Poland and Bulgaria have more sophisticated techniques. The argument is based on the missing link of social science strategy and technology strategy. International development strategy in research organizations has started to tackle a part of this problem to provide its clients and customers from the economy, science and politics. In order for companies to have constant access to the latest knowledge, and in order for this knowledge to be processed quickly and used independently of the location, Fraunhofer [19] supports the transfer of knowledge from science to economy. The active business development role of developing nations like India and China has made a huge impact in product development circles in Europe. The general opinion among less matured industrial organizations are that India and China can be cheap and the products might find multiple users beyond any dimensions available in Europe. The arguments might be of value but why cannot EU make products locally and distribute them in Asia?

The following arguments rise from empirical research

- 1) Why is internalization suddenly a priority?
- 2) Industry 4.0 is based on four pillars and the main pillar is internationalization.
- 3) Why should global research organizations embrace global culture?
- 4) Why are industrial nations opening up new programs for collaborative work?

Technology was alien to social science and [5,6] argued that only social science was set for governance. According to my study, the crisis starts there and it infected the whole technology development community. Are collaboration, cultural management and global knowledge not linked with social science? [18]. If only methods and practices are to be blamed for data, commercial and academic organizations can change their methodologies for data collection. Validation of data and data analytics are still very immature and BIG-DATA is evolving without any kind of validation.

CONCLUSION

Research organizations in Europe embrace social science in to their main stream of business but still statistically the team notices that there are only 2 social science institutions in Germany out of 66 technology institutions [19]. Countries like India or China also will attract technology developers to work with their organizations but social science is in a worse situation compared to Europe. The long-term sustainability of development cannot be achieved in such a constellation where development is based only on technology. Europe has the capacity to enhance social science even though the social scientists have few numbers in their side to prove their theory being effective or not. Social Science is definitely in crisis superficially but the importance of this science is starting to mature. Even though, the impact can be proven in a longer term than engineering domains, continuous persistence and motivation to understand different domains of social science in global context is the key to solve this mini-crisis. In this study, the team does not agree that only methods and practices are the reason of social science crisis and decline but embracing training and cultural differences are the key to avoid this depicted social science crisis.

REFERENCES

- 1) Richard Nelson, A Comparative Analysis Columbia University - School of International & Public Affairs (SIPA) 1993
- 2) V. Venkatesh, Robert H. Smith School of Business, Van Munching Hall, University of Maryland, College Park, Maryland 20742
- 3) Folke, C., T. Hahn, P. Olsson, and J. Norberg. 2005. Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources* 30:8.1-8.33.
- 4) Pahl-Wostl, C. 2002. Towards sustainability in the water sector: the importance of human actors and processes of social learning. *Aquatic Sciences* 64:394-411.
- 5) Pahl-Wostl, C., E. Mostert, and D. Tàbara. 2008. The growing importance of social learning in water resources management and sustainability science. *Ecology and Society* 13(1): 24. [online] URL: <http://www.ecologyandsociety.org/vol13/iss1/art24/>
- 6) Goldthorpe, J.H. (2000) *On Sociology*. Oxford: Oxford University Press. Goldthorpe, J.H. and D. Lockwood (1963) 'Affluence and the British class Structure', *Sociological Review* 11(2): 133-63.
- 7) Goldthorpe, J.H., D. Lockwood, F. Bechhofer and J. Platt (1968/69)
- 8) *The Affluent Worker in the Class Structure*. Cambridge: Cambridge University Press.
- 9) European Commission (2011) EU Industrial Structure 2011, Trends and Performance,
- 10) DG Enterprise, Brussels European Commission (2012) A stronger European industry for growth and economic recovery, COM (2012) 582
- 11) *The Coming Crisis of Empirical Sociology* Mike Savage and Roger Burrows, 2007
- 12) Abbott, A. (1990), *The System of Professions: An Essay on the Division of Expert Labor*. Chicago, IL: University of Chicago Press.
- 13) Abbott, A. (2000) *Time Matters*. Chicago, IL: University of Chicago Press.
- 14) *Making by making strange: Defamiliarization and the design of domestic technologies*(G.Bell, M. Blythe, P.Sengers 2005)
- 15) *The focused factory*, W, Skinner Harvard Business Review, 1974 (113-121)
- 16) Robert J. Taormina, 2009, Organizational socialization: the missing link between employee needs and organizational culture, *Journal of Managerial Psychology*, 24 (7) 650 - 676.
- 17) Porter, Michael E., and Victor E. Millar, 1985, How information gives you competitive advantage.
- 18) Jean Laplanche, Jean-Bertrand Pontalis, MTA2015 - The 20th Precision Engineering Industry Event (held alongside MetrologyAsia2015)
- 19) Moody, James. "The structure of a social science collaboration network: Disciplinary cohesion from 1963 to 1999." *American sociological review* 69.2 (2004): 213-238.
- 20) www.fraunhofer.de
- 21) www.makeinindia.com
- 22) Dirks, Kurt T., and Donald L. Ferrin, 2001, The role of trust in organizational settings, *Organization science* 12.4, 450-467.
- 23) Mitchell, Timothy. *Rule of experts: Egypt, techno-politics, modernity*. Univ of California Press, 2002.