

Full Length Article

Philosophy of Commercial Soft technology Transfer

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ABSTRACT

This study review of soft technology transfer models and its philosophy. In the previous researches, study of philosophy of technology transfer models has been considered less. The findings from the literature indicated that majority of studies on commercial soft technology transfer are based upon modeling approach and at the same time, the most prevalent classification for technology transfer is intra-organizational and intra-corporate soft technology transfer. In addition, important issues to be studied in literature included optimization of production and business services (lean production, Kanban, etc.) which are in favor of higher competitiveness in organization. It seems that the most important issue in literature is realization of business goals and productive and operational goals in organizations and Evolutional softness trend in the organizational and technology change. This situation created needs for survey of philosophy of commercial soft technology transfer. The findings indicate that philosophically since the humanity technology is in the work position, practice transcends from theorization and naturally technology in terms of epistemology is prior on science. Philosophical frame of transfer of commercial soft technology from the view of ontology has been according to the mental approach and in terms of epistemology, commercial soft technology is accounted prior on science. In terms of methodology, commercial soft technology has been according to the multiple and combinative methodology and from the view of anthropology, commercial soft technology is according to the interpretive approach in which human has authority. All studies indicate that development of transfer model of commercial soft technology in terms of different beneficiaries, participation of different groups, multiple organizational purposes can be considered from the philosophical view of interpretivism.

Key words: commercial soft technology transfer, philosophy of technology

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INTRODUCTION

In the previous researches, study of philosophy of technology transfer models has been considered less. The aim of this article is the philosophical explanation of the transfer model of commercial soft technology. In other words, the research issue is to present an insight to the philosophy of model of transfer of commercial soft technology.

Pitt, Joseph C [1] believes "technology can be known like tools, techniques, tools systems and techniques". He adds "social tools like governments, administrative organizations and legal systems all are accounted technology". Scott has known technology as a work which is being doing by organization and he knows it with two hardware (equipment, machineries) and software (knowledge and skill) aspects.

The definitions have several main elements. Emphasis on knowledge, its systematic application, related to the product and services, being according to the applied processes and systems, targeted activity, being according to the skill, purposeful activity, being according to the necessary methods for providing and producing the goods and services. From another view of technology, a complex process of human in work position, technology in the meaning of humanity in work position, technology should be known like tools, techniques and tools systems and technology is to organize the knowledge for achieving the practical

purposes. And in other words, technology includes human beings, application and consumption of tools and artifacts on behalf of them [1].

METHODOLOGY

Current research in terms of the research purpose (studying the philosophy of transfer of commercial soft technology) is developmental and in terms of the data nature, it is a qualitative research because for extraction of concepts of commercial soft technology uses of library and documentary studies. Current research is according to the method of data collection and it is a non-trial research that has the purpose of explaining the philosophical frame of transfer of commercial soft technology, therefore from this aspect, the research method is descriptive.

The statistical population of this research includes the researches accomplished in the field of transfer of commercial soft technology. «In the qualitative methodology, the researcher instead of variable has relation with the construct which is a meaningful concept. Here, discussion is about the meaning concept instead of variable» [2]. «Qualitative researchers more than emphasis on the representative sample, considers this affair that how they can describe the unit or activity of social world by using of sample or few number of samples and how they can clear and enrich our concept from social world more» [3].

The research variables and data in terms of the qualitative nature of the research include concepts, categories and constructs which are specified and determined through documentary studies. «Data collection method in the qualitative researches includes observation, interview, gregarious interviews and the documents content analysis» [4]. Therefore for information collection, the kinds of technology transfer models, documentary and library data from references like book, Persian and Latin articles, were used. «The researcher in the qualitative methodology seeks to understand a meaning that the actor gives to his act and interprets the information» [2]. According to this, the analysis of documentary and library information is accomplished by using of the content analysis.

Commercial Soft Technology Models and its Evolutional Trends

Soft technology

Soft technology is related to the smart application of experiences or laws common in economic, social and humane activities [5]. Soft technology has been used in different domains of sciences like social, energy, life, management and political sciences.

Soft technology should include two different features namely technological nature and soft nature. Soft technology according to the application domain is divided into eight main domains including commercial, social and cultural technology. Learning through Personal Feeling and Experience (LPFE), soft life technology, soft engineering technology, military soft technology and political technology [6].

This classification of soft technology is according to the sources (humane, natural, supernatural, mental, artistic and cultural sciences), application (including commercial, social, cultural, telepathy, soft life, and soft engineering technology, military and political technology) and function kind (including smart services, enrichment of spiritual life, cultural, social technology and environmental innovation techniques).

Commercial soft technology

Commercial soft technology can be known as the technology of improvement of the economic activities effectiveness and fluorescence of economic value of technologies (soft and hard). According to the table 1, different technologies like exchanges, money, accounting, advertising, management, financial technologies and like them are included in this group.

Jin [7] explained the process of development of commercial and business technology that according to it, soft technology has had root in humane, social and economic activities and its development procedure has been from Sun zi martial arts of ancient China, traditional Chinese medicine, accounting, insurance, stocks institutes, public relations, advertising, and banking. However regularized business technologies and their application were used in economic development of west in industrialization period. Business technology is the process technology and effectiveness technology of economic creative activities of human for gaining economic value from soft and hard technologies. The kinds of commercial soft technologies have been mentioned in the table 1.

Table 1. Kinds of commercial soft technologies

Row	Kinds of commercial soft technology
1	Modern management technology
2	Accounting technology
3	Financial technology
4	Foreign currency technology

5	Patents technology (concession)
6	Money technology
7	Support and logistics technology
8	Advertising technology
9	Insurance technology and system
10	Public relations technology
11	Stocks and guarantee technology
12	Purchase and merge technology
13	Risk investment management
14	Physical distribution technology
15	Virtual technology
16	Growth center technology

Reference: Jin, 2002

Evolutional Trends of models of Commercial Soft Technology

The commercial soft technology transfer models have been first considered in energy sector. The borders of soft technologies have been extended to policies of science and technology. Other borders of soft technology development include development of soft technology transfer to information systems, and use of soft technology transfer in management of natural resources and environment.

Jin [7] conceptualized soft technology as a new paradigm of technology and related it to innovation, innovative system, and competitiveness of enterprises. Afterwards, soft technology transfer was extended in its evolutionary path to production processes and soft management processes (comprehensive quality management, kaizen, etc.) in small and medium enterprises, model of organizational systems transfer (process technologies such as ISO, etc.), and financial and mobile services. In recent years, modeling soft technology of business through foreign investment in host countries,

extension of soft technology transfer to global branding subject in big Chinese companies, Extension of the border of soft technologies in business organization to organizational resources planning as competitive resources, soft technology transfer to establish comprehensive quality management in organization, soft technology transfer in light of knowledge management in multinational companies, implementation of lean production in industries by using soft process technologies, , founding supply chain in small, medium, and big industries and its effects on organizational performance, and presenting marketing soft technology transfer model point to contextual and conceptual revolution of soft technology transfer in business organizations with regard to lean production, inter- and intra-corporate technology transfer, implementation of supply chain, and marketing technology transfer model in small and medium enterprises. (Table 5 Appendix).

The results obtained from review of the related literature showed that attitude and type of the studies were mostly based on modeling (around 39%) followed by conceptual model (29%) (Table 2).

Table 2: Attitude of studies on commercial soft technology

Attitude	Modeling	Conceptual	Case study	Field study	Literature review	Total
Number	16	12	9	2	2	41
Percentage	39	29.27	21.95	4.88	4.88	100

At the same time, the most prevalent approach in technology was inter-organizational and inter-corporate soft technology transfer (53%) followed by sectoral soft technology transfer (around 22%) (Table 3).

Table 3: Attitudes of soft technology transfer

Classifications	Endogenous and organizational	Multinational companies	Sectoral	Research institutes	Education, culture, and knowledge management	Total
Number	22	5	9	1	4	41
Percentage	53.65	12.20	21.95	2.44	9.76	100

The most important economic sector in the beginning years was energy sector whereas in final years, the focus has turned onto enterprise and business organization level. Also, the most important subject mostly

included optimization of production services and business (lean production, comprehensive quality management, ISO, Kanban, organizational resources planning, global branding, marketing, etc.) in favor of higher competitiveness in organization and survival of economic unit in the competitive atmosphere. It seems that the most prevalent subjects were realization of business purposes and production and operation strategy goals in organizations.

Philosophy of commercial soft technology Transfer Philosophy of technology

Studying the technology philosophy is necessary for more exact explanation of technology transfer concept. Bagheri [8] in a division knows the technology philosophy including three kinds that the first kind is natural technology philosophy and neutral in terms of value, second kind of technology philosophy is considered a cultural affair but with single value that the dominant value on it is arisen from tool rationality and tendency to the possession and domination. In third kind, technology philosophy is considered like a natural, cultural and multi-value affair. The researcher has accepted third kind for technology education.

Pitt [1] believes the discussion of technology epistemology has had importance and it is prior on social criticism. In Pitts definition about technology, it is imagined as a complex process of human in the work position in which the knowledge resulted from previous works has been revised in the light of new knowledge and new works are accomplished with concentrating on achieving the special purposes. This process embraces the assessment and feedback of action and analysis. And finally since knowledge isn't possible without previous works and humanity technology is in the work position, practice transcends from theorization and naturally technology in terms of epistemology is prior on science [1]. He knows social structures as one of the humanity tools for establishment of order and safety, an evidence of technology.

Taghavi [9] has known Pitts model with four elements and he knows that it has more richness in explaining soft and social dimensions of technology. Also Heidegger introduces Gestell concept as the technology nature. In fact, Heidegger has passed from interpretation of technology as a tool and he has reached to more complete definition namely «technology as a manner of discovery and also accounts new technology as a manner of discovery».

About existential priority of science on technology or priority of technology on science, there are two views. First, idealistic view in which science is prior on technology, second view is materialistic that technology in terms of epistemology is prior on science, this research has considered second approach (priority of technology on science).

Philosophy of transfer of commercial soft technology

Technology philosophy means to think in relation between technology and its social texture and a tool for establishment of rational ratio with technology and critical questioning with technology. At current research, technology is imagined as a complex process of human in the work position in which the knowledge resulted from previous works has been revised in the light of new knowledge and new works are accomplished with concentration on achieving the special purposes. Since knowledge isn't possible without previous works and humanity technology is in the work position, practice transcends from theorization and naturally technology in terms of epistemology is prior on science (Heidegger & et al, 2014: 103).

Technology has been made by human and it is a tool in the human's hand and service for achieving his purposes. Heidegger «has known technology as a manner of discovery and he accounts the presence and new technology as a manner of discovery». It can be said that both new and old technologies in terms of ablative camouflage are a kind of discovery.

At current research, definition of technology and its nature are according to an approach in which technology has been as humanity in the work position that in terms of knowledge, it has been technological, artifact-driven, inclined to utility, and it has skill aspect and prescriptive rules and in terms of epistemology, it is prior on knowledge and also humanity artifacts and administrative, legal and social systems and organizations are accounted as technology.

According to the definition, soft technology has been a kind of practical knowledge system arising from smart application of experiences or laws common in economic, social and humane activities that forms the laws, concepts, game rules, methods and procedures which help to improve, conform and control the objective and mental world. Soft technology includes two different features namely technological nature and also soft nature, he knows the commercial technology (business soft technology) as the technology of economic activities process of creative human [7]. According to what was mentioned in the previous clauses, the philosophical principles of commercial soft technology can be summarized in this manner:

Since the transfer of commercial soft technology is according to the soft and technological nature, therefore from the view of ontology, there is not a system independent from human's thoughts in external world and the models have been merely the manifestation of the mental concepts of persons and they are local-mental. In terms of epistemology, commercial soft technology has been accounted prior on science and in terms of methodology, commercial soft technology has been according to the multi-methodology and combinative method and in terms of anthropology view, commercial soft technology is according to the interpretive approach in which human has authority and he is effective and impressionable (table 4).

Table 4. Philosophy of commercial soft technology

Row	Issue	Feature
1	Ontology	Mental
2	Epistemology	Technology prior on knowledge
3	Methodology	Multi-methodology
4	Anthropology	Having authority

CONCLUSION

Studies show that Current trends indicate ever-increasing importance of commercial soft technology in main and support systems of production and industrial units. The findings obtained from review of literature revealed that type of studies on commercial soft technology was mostly based upon modeling and the most prevalent attitude in technology transfer was inter-organizational and inter-corporate soft technology transfer. It seems that the chief subject in the studies on commercial soft technology transfer was realization of business purposes and productive and operational strategy goals of organizations and revolutionary softness trend in the organizational and technology change. This situation created needs for survey of philosophy of soft technologies.

Philosophical study of the transfer model of commercial soft technology explains this issue that in terms of ontology, it has been mental and there is not an independent system in external world and in terms of epistemology, the commercial soft technology has been accounted prior on science and in terms of methodology, it has been according to the multiple methodology and combinative method and from anthropology view, commercial soft technology is according to the interpretive approach in which human has authority and he is effective and impressionable.

In final conclusion, it can be said, the issue of development of transfer model of commercial soft technology in terms of different beneficiaries, participation of different groups, multiple organizational purposes can be considered from the interpretive philosophical view.

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Appendix1:

Table 5: Different approaches of soft technology transfer model

No.	Model	Year	Type of study	Approach	Attributes	Sector
1.	Lovins	1977	Case study	Sectoral	Renewable energy as a soft technology	Energy
2.	Iceman et al.	1978	Case study	Sectoral	Synthetic fuels as a soft technology	Energy
3.	Dobrov	1979	Conceptual	Endogenous	Organized technology	Enterprise
4.	Morrison	1983	Conceptual model	Endogenous	Social considerations	Business enterprise
5.	Ainsworth	1984	Conceptual model	Intra-corporate	Hard data and soft technology	Medical sciences
6.	Agrawal	1995	Conceptual model	Endogenous and intra-corporate	Process technology	Enterprise
7.	Atkinson	1997	Modeling	Education and knowledge management	Social and informational goals and learning cycle	Medical sciences

8.	Burgess & Gules	1998	Case study	Sectoral	Implementation of soft and hard technologies and the relationship of buyer and supplier	Automation industry
9.	Jin	2002	Modeling	Intra-organizational	Evolutionary trend of soft technology	National and enterprise level
10.	Jin	2002	Modeling	Intra-organizational and learning	Evolutionary trend of soft technology	National and enterprise level
11.						
12.	Petersen	2004	Modeling	Intra-organizational and learning	Soft and hard information model of financial institutions	Enterprise
13.	Jin	2004	Modeling	Intra-organizational and learning	Innovation in social resources and services	Enterprise
14.	Bessant & Francis	2005	Field study	Intra-organizational	Soft technology of continual improvement	Enterprise
15.	Gustavo et al.	2005	Field study	Intra-organizational	Soft dimensions of organizational knowledge transfer	Enterprise
16.	Guo & Liang	2005	Conceptual model	Research institutes	Redefinition of soft technology according to knowledge system	Macro level
17.	Antovski	2007	Conceptual model	Sectoral	Improvement of services with soft technology	Services
18.	Kollamparambil	2008	Case study	International	Soft technology transfer through foreign investment	National level
19.	Ille	2009	Case study	International	Global branding by soft technology (marketing)	National level
20.	Atkinson & Brooks	2009	Modeling	Intra-organizational	Methodological cycle of soft information technologies	Enterprise
21.	Alirezaei & moradi	2011	Conceptual model	Intra-organizational	Effective factors on acquisition of soft technologies	Enterprise
22.	Laker & Powell	2011	Modeling	Intra-organizational	Effects of hard and soft skills on education transfer	Institution level
23.	Nitin et al.	2011	Modeling	Intra-organizational	Comprehensive quality management for manufacturing excellence	Institution level
24.	Lee et al.	2011	Modeling	International	Soft technology transfer management in light of knowledge management	Institution level
25.	Rose et al.	2014	Modeling	Intra-organizational	Implementation of lean production	Automobile industries
26.	Hibadullah et al.	2014	Modeling	Inter-organizational	Implementation of lean production	Automobile industries
27.	Jayaram et al.	2015	Case study	International	Marketing technology transfer	Marketing
28.	Kumar et al.	2015	Modeling	Inter-organizational	Implementation of supply chain and organizational performance	Business enterprise