

The Evolution of Design Management: A Comparison of the UK, US, and Japan

Sylvia Xihui LIU



Sylvia Xihui LIU, Hong Kong Polytechnic University, Hong Kong

Dr. Sylvia Xihui Liu focuses on design management as well as design and business research. In Feb, 2013, she was appointed research assistant professor, School of Design, the Hong Kong Polytechnic University, where she obtained a PhD degree in 2011. Prior to the appointment, she was a design manager at Nova Design (Shanghai), from 2002-2007. Her clients included: Siemens, General Motors, Yamaha, Electrolux, BBK, and other major brands. She and her design team have won several international design awards, including IDEA, IF, and Reddot. Contact: Sylvia.liu@polyu.edu.hk

ABSTRACT

Although we use the same word “design management” to describe and define the strategy, organization, and implementation of managing design, the UK, US, and Japan demonstrate different approaches to it, because of their different cultures, national policies, and manufacturing histories. In the UK, starting from problem of managing design consultancy efficiently, design management sought to develop a separate category of management related to design. It endeavors to be independent from design and become a sub-category of management. In the US, originating from design service for industry, design management refers to the management of design issues for adding value to business development. Japan developed design management into a more practical approach. In Japan design was initially used as a way to control quality and cost in process management. Later the Japanese approach to design management, in which design management seeks to include design as a general part of process management, was formulated. These three approaches strongly influenced other countries. Through comparison of these three approaches, this paper shows how the context influences the content of design management. This will enable scholars to understand the development of national industry and design management practices.

Keywords: Design history, Design management, Design industry, Design policy, Design profession, Manufacture

1. INTRODUCTION

Design management has developed in tandem with the manufacturing industry. Thus, manufacturing, design issues, and their interactions are central to design management research. In practice, there are two elements which have a direct influence on design management practices at the enterprise level, design development and design awareness. Design management is also influenced by the macro background, which consists of economic, political and cultural factors. Since the evolution of these background factors varies between countries, there are many different practices of design management and patterns of recognition of design in companies. Among scholars, this is evidenced by the fact that no consensus definition of design management exists. The relationship between design management practices in industry, the design profession, and its macro background is shown in Figure 1, which represents the conceptual model of the research.

The factors at the national level, including economic and political factors and the role of government in promoting design, and at the industrial level, such as industry practices and

the design profession, must be explored in order to understand design management practices in different countries. In this paper, the factors influencing design management in the UK, US, and Japan are discussed. These three countries have held leading positions in design, design management, technology, and economy. The UK and US have both played major roles in representing a particular approach to economic development, based upon neo-classical economic theories, most recently evident in the idea of the “free market.” This advocates the free play of market forces unhindered by any government control or interference. By contrast, the economic recovery of Japan after the Second World War was based upon government intervention, with the Ministry of International Trade and Industry (MITI) playing a leading role. This also profoundly influenced the subsequent development of Taiwan and South Korea as economic powerhouses. An overlooked component in the Japanese “economic miracle” was the development of design and, in particular, of design management as an integral component of industrial development.

The content of design management may be divided into three levels: implementation, function,

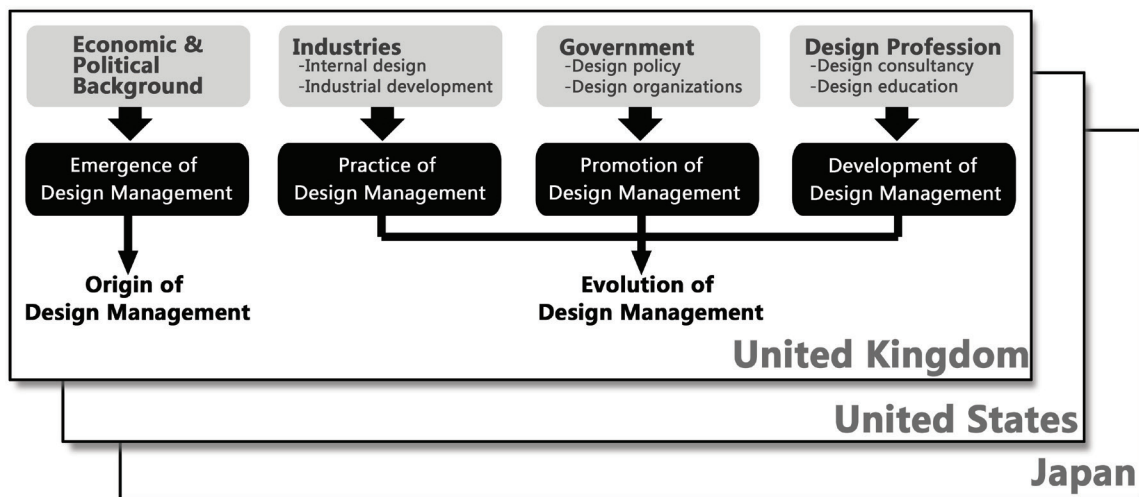


Figure 1. Factors influencing approaches to the study of design management

and strategy (Borja de Mozota, 2003). As with the linkage between design and business, the three levels of design management are influenced by the conditions of the nation and its industries and enterprises. Though scholars have investigated these issues from the standpoint of design history, horizontal comparisons between different countries are lacking. This research will thus answer the question, “in formulating the approach to design management, how is the content of design management influenced by its context, including macro factors, industry development, the role of government, and design profession development?” In this study, major studies and publications on each factor in each country are reviewed and professional opinions are obtained via expert interviews. Finally, the origin and evolution of design management in each of these different contexts is proposed in this paper. This not only contributes to a holistic understanding of design management, but also acts as a guide to developing design management through adaptation to local conditions in a country. This is especially critical for developing countries seeking to establish their own strategies for using design in business development.

2. ORIGINS OF DESIGN MANAGEMENT IN THE UK

Although European and US designers vary in their economic, management, and political backgrounds, they have much to learn from one another. Europeans generally manufacture products in smaller quantities to serve a more homogeneous national market. Their products were developed with less dependence upon marketing and consumer studies, and with smaller production volumes that could be achieved with simpler tooling and higher labor costs. US products, on the other hand, had to appeal to a diverse consumer base. Therefore, they were more dependent upon marketing analysis and promotional planning and on high-

volume production, which demanded more complex tooling and lower labor costs (Pulos, 1988). This resulted in differing paths of the design development.

Of the European countries, the UK was the first to use the term “design management”. Today UK research into design management is still considered to be a major influence in the world, with strong support from government and education.

2.1 1851 London Exhibition: A turning point

As the cradle of Industrial Revolution, the UK retained technological leadership until the middle of the nineteenth century. By the 1830s, however, it became evident that design leadership was not necessarily achieved via technological advances. This was clearly evident in the report on the proceedings of the UK Parliamentary Commission on Art and Industry (Quentin Bell), issued in 1836, in which industrial design was mentioned as an independent activity for the first time.

Henry Cole was the key figure advocating the application of art to industry. As he stated, an alliance between fine art and manufacture would promote public taste (Woodham, 1986). His thinking even influenced the UK products displayed in the 1851 London Exhibition. The Crystal Palace indicated that a winning industrial strategy would be to harness what was described as “artistic craftsmanship” for the design of manufactured products. However, UK products were not based on mass-production by mechanical techniques. Instead, production was a craft-based, with molds made and products finished by hand (Conway, 1977).

Another dominant opinion was represented by William Morris, who, as a leader of the 19th-century English Arts and Crafts Movement, advocated the combination of art and craft and was anti-industry in his attitude. He proposed that industrial crafts could be revived as a collaborative

enterprise of designers and craftsmen. In fact, Morris's opinion resulted in not only a separation from industry, but also a separation between design and art, which was reflected in education. As a design school, RCA has maintained its name as an "art" school, instead of "design" school, from 1896 to the present.

After the severe Great Depression of 1873-1896, UK technological leadership gradually receded. Meanwhile, other industrializing nations, such as the United States and Germany, were more receptive to overseas investment and began industrializing at a rapid rate, especially after Queen Victoria's death in 1901. The losses and destruction of the First World War, the depression in the 1930s, and decades of relatively slow growth eroded the United Kingdom's pre-eminent international position of the previous century.

Although the growth of UK economy was not as fast as other major European powers and the UK gradually lost its colonial markets, professional design emerged slowly but continuously, especially in the profession of design consultant (Sparke, 1990). There were two reasons for this progress: the endeavor to promote design by the UK Government through national policies and promotion organizations, and the growing practice of design consultancy.

2.2 UK Government: Managing Design at the National Level

The UK Government played an active role in providing support for design and innovation policies (Walsh, Roy, Bruce, & Potter, 1992). The UK usually promoted design in industries and the public arena by national design policy and design (management) research projects, through its various agencies. Among them, the Design Council (formerly the Council of Industrial Design, CoID) played an essential role in connecting design practice with national policy. It was established in 1944 by Hugh Dalton, President of the Board of

Trade in the wartime Government. Its objective was "to promote by all practicable means the improvement of design in the products of UK industry" (Russell, 1968). To promote good design among manufacturers and consumers, it organized a series of exhibitions, lectures, and conferences, including the *The UK Can Make It* (BCMI) exhibition of 1946, "Design Weeks" around The UK, the launch of Design magazine in 1949, the Festival of The UK in 1951, the establishment of the Design Centre in 1956, and the Design Centre Award Scheme in 1957. The Design Council was in its structure a typical UK solution, in that it was financed by government but not controlled in detail by it. The role of the Council was intended to be a bridge between government and practice, but in fact, it remained an outside force to both.

2.3 Design Consultancy: An Independent Profession

As another resource of professional design development, design consultancy was in fact the main context of design activities and design management practice. It was in the 1930s that UK efforts to develop design consultancy along US lines emerged (Sparke, 2004). In the 1940s, early UK consultant designers emerged to provide a necessary alternative to the traditional system of in-house designers. Later, a mature generation of design companies appeared from two directions in the 1950s. From the 1970s, new design companies came out with greater specialization, which usually broke down into groups within large organizations (Sparke, 1990).

In these design consultancies, management issues were gradually involved in their business development. The relationship between design and management in practice became divided into two stages: first, the management of different functions, project management and financial management, and second, management of expanded business. In the early stages, design consultancies were usually founded by designers

or partners, who were professionals in design or related principles. They lacked the experience and knowledge to run a business. To solve the business and management problems during their development, many design consultancies employed management consultants or marketing professionals. This led to the original combination of design and management in practice.

The second stage began in the 1980s and was influenced by a transformation of business type and globalization. As design consultancies went public, they underwent a series of mergers and transformations in their practices. Expanding design consultancies face many challenges, such as how design should be managed as a resource both in design business and outside, and how to transform design from one-off jobbing activities into part of a corporate system (Sparke, 1990). These problems finally led to the boom in design management research. Faced with these challenges, the design consultancies modified their structure and management through employing professionals (Linton, 1988).

It was the practice and study of managing design consultancies that directly contributed to the emergence of design management in The UK. In 1960, Dorothy Goslett published the first version of her influential book *Professional Practice for Designers*, which explicitly introduced professional practice and design administration to professional designers both in consultancy and as freelancers. In the academic field, the book *Design Management*, written by Michael Farr in 1966 represents the emergence of the term “design management” formally. In the course of his work in Pentagram, Peter Gorb published *Living by Design* in 1978 and established the first design management class for MBA students at the London Business School (LBS) in the UK.

2.4 Design in Industries

The earliest contributions to industrial design and design management in the UK were made by

Frank Pick. His major contribution was the redesign of the London transportation system, which in the 1930s reached a height of excellence in a strongly unified system. This work was outstanding, but it should be noted that it was a transport system, a public service, that he managed, not a manufacturing company.

Since 1950, the UK has consistently lost market share both within the UK itself, where imports have been taking an increasing share of the home market, and in world markets. Corfield indicated that a lack of emphasis on design led to lower product quality, which resulted directly in decreased exports. After Pick, it was not until the mid-1950s that a few of the larger companies began to employ “stylists” or designers in the UK (Olins, 1986). Although design as a profession had developed into an independent industry to a certain extent at that time, designers were still low in status. Companies preferred to rely on large advertising agencies for creative and marketing services. Until the early 1960s, there were few UK enterprises employing designers on a massive scale. In view of this situation, scholars suggested that the move to better design must be exported, and a general improvement in communication between the design profession and industry was needed. For many, the establishment of the Design Management Unit at LBS represented the kind of positive initiative required.

Meanwhile, the government played an active role in promoting the application of design in manufacturing enterprises. In 1982, a Funded Consultancy Scheme was founded by the Design Council. It offered companies having 30-1000 workers the use of a design consultant free for two-weeks and a further similar period at half-price. This was closely attuned to the thinking of Margaret Thatcher’s Conservative Government, and soon became the order of the day.

However, from its beginning, based on various studies, UK manufacturers were analyzed and

criticized as lacking awareness of design value, which resulted in the poor performance of industries and the economy in international markets (CNAA, 1984; Ughanwa & Baker, 1989). In many enterprises, design was only viewed as a “face-lift” or styling a product (Lorenz, 1984). With practical experience of design and an educational background combining business and design, Alan Topalian observed: “the UK’s dramatic slide down the league of industrial nations is a clear indication that the neglect of design is detrimental to profitability” (Topalian, 1985).

2.5 UK: Design Management in Academia

In UK, it is the practice of design consultancies that is the primary source for the birth of design management. Though the term ‘design management’ first emerged in the UK, its development was limited to the academic field with a separation from practice in industries. Since the Industrial Revolution, the UK maintained a weak industrial structure and relied on its imperial-trade market. With the decline in manufacturing, the gap between design and management increased, relative to the progress of design management as an independent profession. As a result, the content of design management in the UK mainly consists of two separate parts: practice and theory. As John Heskett (interview, September 5, 2008) stated, in the UK, design management sought to develop a separate category of management related to design. It endeavored to be independent from design and become a sub-category of management.

3. ORIGINS OF DESIGN MANAGEMENT IN THE US

3.1 Protectionism and the American System

Given the current emphasis on “the Free Market” in the US, it may appear surprising that protectionism was the macroeconomic background of early industrial development in the US. Previously, UK trade policy toward the US colonies was mercantilist, positioning the colonial economy

as part of a closed and tightly-controlled system. Having achieved independence, however, many in the fledgling United States advocated protectionist policies similar to those they had earlier condemned. In his “Report on Manufactures” in 1791, Alexander Hamilton, the first US Secretary of the Treasury and the principal advocate of import restrictions, emphasized the needs of infant industries (Hamilton, 1957). Hamilton claimed that imposing tariffs to help protect newly founded infant industries allowed those domestic industries to grow and to later become self-sufficient within the international economy once they reach a reasonable size.

The United States was influenced by the Industrial Revolution in the UK around 1770, which led to the development of industrialization and mechanization (Heskett, 1980). It established a basis for modern manufacturing, and transformed a scattered and erratic system of home manufactories into industries. Meanwhile, there was also a sense of urgency to establish an independent nation. With independence, products were designed with historic features as a model for countless reproductions in the future (Pulos, 1993). The earliest design practices can be traced to this time.

A characteristic approach was taken up in the United States around 1800, and developed on a scale that thoroughly justified its being called “the American system” (Heskett, 1980). Throughout the 19th Century, leading US statesmen, including Senator Henry Clay, continued Hamilton’s themes within the Whig Party under the name “the American System”, which first began to be recognized by the world as a result of the 1851 London Exhibition. Although the US products in this exhibition were criticized at first as being severe and even tasteless with little or no ornamental value, the improvements in the American system of manufacturing demonstrated that a product designed for machine production could be made substantially less expensively than

the best handmade product. This was finally recognized by visitors (Pulos, 1993). In fact, the design of products for mass-production affected the whole work system, including organization, co-ordination of production, the work-process, marketing methods, and type and form of the goods produced (Heskett, 1980; Pulos, 1993).

In the second half of the nineteenth century, there were series of tremendous changes in manufacturing, society and arts, including Frederick W. Taylor's studies of Scientific Management, which transformed the life of the US with mass-produced products, continued its influence into the twentieth century and totally changed the management of manufacturing.

3.2 Mass-production

The culmination of early mass-production began to appear before the First World War in the automobile industry. In 1907, Henry Ford began manufacturing the Model T on the premise that the automobile of the future should be affordable to the masses. The principle of modern mass-production system was: quantity production of a standard design with interchangeable parts, on a moving assembly line, to the pace and nature of which the workers were compelled to adapt (Heskett, 1980). When Henry Ford's production lines became the prototype for other factories producing war materials in the First World War (1914-18), the world began to realize the capabilities of mass-production methods (Pulos, 1993).

Technological innovation and mass-production brought former luxury items to people at lower income levels, The US people preferred "buying a living" in the 1920s (Meikle, 2001). To meet market demand, the productive capacity developed in wartime was transformed into consumer production. To align market demand with their production capacity, manufacturers began to focus on variations in product form and packaging (Heskett, 2003). Businessmen were advised to revise their products "to fit new needs or ideas."

However, it seemed that there was a conflict between consumer demand and the system of mass manufacturing (Meikle, 2001; Pulos, 1993).

The nature of mass-production is its inflexibility (Heskett, 2003). The system of mass manufacturing is based on a fixed production line and standardized components, which require large investments. To achieve high market returns based on this inflexible system, products had to be manufactured in large volumes with constant flows of resources and products. Design was seen as an economical and efficient method to balance the requirements of mass manufacturing systems against the demands of mass consumption. It was General Motors (GM) which developed a new product-policy programme by emphasizing "the very great importance of styling in selling" in 1921. GM first used this logic to guide planning and management. This can be viewed as the earliest practice of design management in the automobile industry with a combination of the practice known as styling and industrial management.

It was the First World War that marked a turning point in US design. US industrial arts, despite the general feeling that they were generations behind those of Europe, began to catch up. The war stimulated an enormous expansion of US productive capacity, which was converted after 1918 into a consumer boom. With the growth of mass-production based on massive capital investment, there was a constant search for means of reducing costs and increasing sales. Standardization and rationalization appeared as an answer. Improved visual form of products became an important tool for boosting sales. However, the Wall Street Crash of 1929 and the subsequent Depression created intense competitive pressures among those firms that survived, resulting in a further alignment of industrial design and manufacturing.

From its beginning, industrial design was embedded in US industries. However, its value was not widely recognized until the Depression. Industri-

al design was more concerned with making common necessities attractive to the general public during this decade. At that time, encouraged by the successful example of GM, many design departments were established under various titles by large automobile manufacturers and other product manufacturers (Heskett, 1980). Meanwhile, professional design consultancies were also employed by manufacturing firms (Meikle, 2001). Thus, US designers began to demonstrate their ability, driven by the short-term commitments of manufacturers to design leadership in transforming science and technology for human service (Pulos, 1993). Streamlining emerged at that time as a recovery slogan. In addition, an Index of The US Design in the Federal Art Project was established by the US Government (from 1935 to 1943) to stimulate the public's interest in design (Pulos, 1993). Two major design organizations, the American Designers Institute (ADI) and the Society of Industrial Designers (SID), were also founded in the United States in 1938 and 1944, respectively.

3.3 Internal Design: Management in Organization

After the Depression, both the relationship between design and business, and its position in an organizational structure, continued to develop, especially in the context of organizational management. Integration of the design function into the structure of companies means, however, that designers' achievements cannot be considered in isolation, but have to be understood and evaluated within the framework of the corporate purposes they serve, and the corporate values they express. In many companies, such as IBM, design is linked closely to a large Research and Development department, its role being to give the latter's work a form accessible and acceptable to the public (Heskett, 1980). As a result, according to different scales of business, companies began to use diverse strategies of developing in-house design. Some mid-size companies depended upon outside consultants. Major manufacturers were

the most likely to have fully staffed corporate design departments, the heads of which reported to top management and were at the same level as the heads of engineering and marketing. In some companies, the industrial design group operated, in effect, as a company within the company (Pulos, 1988).

3.4 Design Consultancy: Managing Design for Business

In the US, the first generation of professional industrial designers was represented by the "big four", Walter Dorwin Teague, Norman Bel Geddes, Henry Dreyfuss, and Raymond Loewy, in the 1920s. They contributed to the US design consultancy by establishing the first fully-fledged industrial design offices with similar methods of operation. Their lives and work provide an index of the origins, purposes, and early accomplishments of industrial design. Their work also contributed to the management of design consultancies including the formation of a basic working procedure of design service and administrative management. For example, in the 1940s, Bel Geddes distinguished his operation of design consultancy with office manuals, which incorporated Taylor's theory of the factory management for efficiency (Meikle, 2001).

3.5 Design Management as a Profession

In the academic field, based on design practice in industries, the Aspen conference in 1950s and the establishment of the DMI in 1975 represented the emergence of design management as a profession. The Aspen conference began to systemically think about design in the content of management in a series of conferences, including "Design as a Function of Management", held in 1952 and 1953. With the establishment of the Design Management Institute in 1975 at the Massachusetts College of Art in Boston in the United States, design management tended to follow Europe and the US in the late 1970s (Cooper, 2006). In practice, some designers, in either a corporate or consultant context, began to enter the management level.

They were gradually moving up the management ladder to positions where the appearance, the performance, and the dependability of the product were only part of a broad spectrum of concerns that included price planning, programming, line control, and market analysis (Pulos, 1988). In the US, design management education reflected the educational system it belonged to. In business schools, it was initially only part of classes and focused on marketing (McAusland, 1993). While in engineering schools it emphasized engineering science, in industrial design schools had a strong product focus (Kefallonitis, 2007; Ulrich & Eppinger, 1992).

3.6 US: Design Management in Industries

Design management in the content of industry is the key characteristic of the US approach to design management. Both in business practice and in academic research, design management is viewed in the context of business and as a part of management in practice. Design management refers to the management of design related issues, including strategy, organization and operation to adding value for business development. Even in education, design management is a part of MBA programs in many business schools, and it is viewed as a part of the management profession, instead of as an independent discipline.

4. ORIGIN OF DESIGN MANAGEMENT IN JAPAN

4.1 Influence of Foreign Countries

After the Second World War, US policy had the greatest influence on economic and design development in Japan. From 1945 to 1951, in the post-war occupation, Japanese industries were restricted by the US. Japanese firms imported US products and imitated them. US forces occupied Japanese cities and their lifestyle influenced the Japanese (Ekuan, 1991; Tsuruta, 1990). The US lifestyle was considered as being clean and efficient, one that afforded comfort and was within

the reach of anyone living within a democratic society. The Japanese economy did not develop until US removed its restrictive policy in 1951. After the outbreak of war in Korea, a powerful Japanese economy became a vital element of US policy. Japanese enterprises were enriched by large and valuable orders for military equipment and supplies. These factors led to the development of the Japanese economy, which was recognized as a milestone in the development of design.

In modern Japanese history, overseas study projects were traditionally the main channel for study of advanced foreign technology and knowledge, and the majority of these missions were organized by government. They introduced foreign design knowledge into Japan. The first generation of Japanese designers was cultivated in this way. The Iwakura Mission was the first study abroad project, which was launched in 1871, and consisted of about one hundred officials, translators, technical experts, and students, who to set out to learn about European manufacturing techniques and collect examples of European goods (Hiesinger, 1994). There was also a special project for industrial design from 1955 to 1966, which was instituted by the MITI and administered by the Japan External Trade Organization (JETRO). Influenced by the overseas study project by MITI, from 1950, there were increasing numbers of overseas design studies, organized either by professional design organizations or by private companies starting in 1950.

Foreign advisers and consultants also transferred knowledge in the development of modern Japanese design. These advisers can be divided into three levels: national, design professional, and management.

At the national level, German scholars such as Dr. Gottfried Wagener and Bruno Taut were invited by the Japanese Government in the 19th century and after the First World War. They introduced

the ideas of designing and producing consumer goods, referencing practices in the *Deutscher Werkbund* (Fischer, 1994). Similarly, US scholars George Nelson and Freda Diamond were invited in 1957 to review Japanese goods for their suitability as exports (Hiesinger, 1994).

At the professional level, Raymond Loewy, Niels Diffrient, and Jan Doblin were invited by MITI in the 1950s. The effect of this was so significant that it influenced the development of the consultant-design profession in Japan. In addition, an advisory group was invited from the Art Centre School of Los Angeles in 1956. They recommended improving design standards in Japanese products and packaging, encouraged the development of design education, and urged a long-term view in developing markets for new products.

At the level of management, W. Edwards Deming and J. M. Juran were also invited to advise Japanese enterprises. With their theories and practice in Japan through the books *Quality-control Handbook* (1951) and *Sample Design in Business Research* (1960), they contributed to the modern practice of management in the Japanese enterprises which provided the basis for the “the art of Japanese management”.

4.2 Government Promotion: National Policy

In the Japanese Government’s role of contributing design and design management, the government-business linkage was a distinctive and significant one (Evans, 1990). There was close co-operation between the business conglomerates and the state (Sparke, 1987). These links were fundamental elements of the design management success in Japan, because they enabled rapid progress in highly capital-intensive research (Evans, 1990).

The Japanese government not only supported economic growth, but also contributed to design development in various ways. It was the technology and quality control introduced by the

government that made it possible for one industry after another to overtake longer-established competitors abroad and build Japan’s export markets (Aldersey-Williams, 1992). It also sowed the seeds for design to enter Japanese companies. Hiesinger (1994) gave examples of design laws and policies established by Japanese Government, such as the design law of 1921, which required a statement of “originality” in copyright application, the Export Commodities Design Law of 1959, which regulated official registration of design, and the design policies of the 1990s. Raizman also emphasized the contributions of the Japanese Government through its agencies, such as the MITI, JETRO, JIDPO, and the awarding of prizes, especially the G-Mark.

4.3 Design Consultancy

The consultant-design profession in Japan was modeled on the practices of US industrial designers (Hiesinger, 1994). Sparke argued that professional industrial design consultants began to form based on the influence of Loewy’s design of Peace cigarette, texts by Henry Dreyfuss and Harold Van Doren translated into Japanese, and support from JIDA. However, these consultants, who stood in the position of outside commentators, failed to note the factors influencing the foundation of Japanese consultancies in the 1960s, such as GK Associates and Hirano Associates, based on internal needs rather than external practices.

At present, as the business, industrial, and market environment of design changes, three new types of Japanese design consultants have developed: network system, design-market critics, and technology direction (Masuda, 1996). They also formulated their own characteristics, which may be categorized as follows: (1) a small proportion of design consultancies in Japanese design; (2) integration of external and internal design; (3) a long-term relationship with manufacturers in key industries; and (4) a limited role.

4.4 Internal Design

After the Second World War, the rapid change of industrial structure and national policies heightened the recognition of design among Japanese manufacturers. When home appliances were assigned to large manufacturing companies to produce, new foreign technologies were employed to increase the competitiveness of the products. This led the manufacturers to gradually recognize the role of design. Further, the effect of the channels for exchange of ideas between bureaucrats and businessmen in Japan should not be underestimated. These exchanges indirectly convinced manufacturers to employ designers at that time (Heskett, 1998).

From the early 1950s, in-house design departments were established in large companies. However, during this period, most design overtly imitated European design, such as Canon copying the German Leica camera or Honda's imitation of the UK Mini. Japanese products were described as "cheap, imitative and shoddy", because Japanese companies were unwilling to employ designers and preferred to emphasize low price. This situation did not change until the 1960s. At that time, design began to demonstrate its important role in promoting exports and most large firms had established in-house design divisions. Designers started to be involved in the process of market research, consumer research, and product planning. As a result, the standard of products and production rose, and a rational mass-production system was established. Later, in-house design departments expanded in both scale and quantity in the 1970s and 1980s.

4.5 Development of Design Management

In Japan, design management is considered key factor in Japan's economic success (Hawk, 1990). The content of design management developed in Japanese companies as the companies themselves developed. Design was seen as an advantage for Japanese products, which contributed to their international competitiveness. The term "design

management" was already emerging in 1957, when Japan entered a period of rapid economic growth. Differing from other terms in management which have been directly translated into Japanese from English, design management is expressed in Japanese as デザインマネジメント which reads *Dezain Manejimento*, written in Katakana, which is a transliteration, not translation, of the words "Design Management" in English (Kiro, 1992).

In the 1950s, Japan began to acquire technologies from Europe and the US, and firms used industrial design to produce products matching the requirements of local consumers. This led to dramatically increasing demands for designers which exceeded the supply, even when the large number of graduates from overseas studies was taken into account. In this instance, "design efficiency" was the focus of business management. This contributed to the emergence of design management, which explored methods for enhancing the productivity of design departments.

The evolution of design management in Japan can be divided into four stages:

- (1) The Emergence of Design Management (1957-1966): In this stage work focused on the definition of design management and standardization of design business.
- (2) The Enrichment of Design Management (1967-1976): During this period, the main changes were the growth of industrial design both in domestic and international platforms, and its increasing contribution to the growth of the economy (Yoshioka, 1993). Meanwhile, in Japanese companies, the importance of innovative product and design development was gradually being realized. Design and technology management became part of culture, economy, and strategy. This was a hitherto unique phenomenon in Japan's design and economic history (Bangert, 2007).
- (3) The Deployment of Design Management (1977-1986): Japanese industrial design entered its mature phase in the early 1980s.

To cope with market segmentation and the diversification of consumer needs, market strategy began to focus on design. Meanwhile, there was a global energy crisis at that time. To survive, Japanese enterprises emphasized enhancing product quality, decreasing production-cost, and low-cost sales. "Design efficiency" became an influential topic. The key issues of design management at that period were: how to operate a company in the low-growth economy, and how to cope with the relationship between different functions.

- (4) **The Development of Design Management (1987-present):** Design in this period achieved distinct effects in two areas: design and national life. In the area of design, 1989 was the Japan Design Year. The ICSID '89 Nagoya conference and the plan for new targets of design for the 1990s were completed that year (JIDA, 1990; Yoshioka, 1993). However, the 1992 implosion of the "Bubble Economy" in 1992 sent deep shocks throughout Japanese society. The nearly 9% annual expansion rate in design services prior to 1992 collapsed, with serious cut-backs, while some design consultancies went bankrupt (Heskett, 2004). However, with the new trends of the global economy, information design, and the high added-value of products, the content of design management was broadened in this period to include product development, organization management, and globalization.

4.6 Japan: Design Management as Part of Process Management

The Japanese Government was the original motivator of design management in Japan. It promoted design through different agencies in different historic stages, as well as design policies, including overseas study projects and invitations to foreign designers or experts to visit Japan. It contributed to the emergence of professional design both among manufacturers and in design offices. To guide the field's direction, the Good Design Award was established. Together with the development of design education and the application of design research, especially market research, design management in Japan first emerged in

manufacturing. This also determined the content of design management in Japan, which is different from that of other countries. As Heskett (interview, September 5, 2008) stated, design management in Japan has been from its beginning, and still is, a part of the process of management.

5. THE THREE PATHS

The main information of design management in the UK, US and Japan is listed in Table 1 and Figure 2. Table 1 shows the practice of design management through criteria at the company level and presents information on the macro background. At the company level, design development and manufacturer's recognition of design, criteria of design origin, early design practice, design organization, internal and external design are described. For the macro background, criteria of design education and industry are listed. Figure 2 shows the main events in the economy, technology, design and politics as a timeline. In the UK, modern design practice initially emerged in design consultancies, a professional field. The UK Government also supported design through supporting research projects, forming a platform to combine design and business, promoting "good design" in industry, and formulating design policies. However, UK manufacturers lacked recognition of design and did not thoroughly integrate it into industry. This resulted in poor export performance. Since manufacturing is the basis for design management practice, with the erosion of its manufacturing base, UK design management became generally limited to the academic field and developed into an independent discipline. As a result, the UK approach to design management could be viewed as a separate category of management relating to design.

From its beginnings, design was closely connected to manufacturing and business in the US. It was the inflexible character of mass-production that directly led to the emergence of industrial design in the form of "styling" among US manu-

facturing enterprises. The first generation of industrial designers emerged in the 1920s. After that, the importance of design was recognized by the majority of US companies during the Depression in the 1930s. A large number of internal design departments were established as a result. Based on the American system and Taylor's sci-

entific management theory, management became a profession and became increasingly important in the practices of US companies. Since design was developed in the content of industry from its beginning, design management was viewed as a part of the management profession and business content in the US.

Table 1. Design management practice in the three countries

	UK	US	Japan
Design			
Origin	1836 UK Parliamentary Paper (Art and Industry)	Inflexible mass-production	German consultants in the 19th century, referencing practice of Deutscher Werkbund;
Early practice	DIA in 1914 Design consultancy and freelancer	GM product policy program; Raymond Loewy.	Mainly by internal design
Design organization	Design Council (1944), DIA (1938). SIAD (1944)	ADI, SID, DMI	JETRO, JIDPO
Government			
Promotion	Influenced by design promoters Endeavor to introduce "good design" to the public; Promote application of design in industry;	Index of The US Design in Federal Art Project	National policy Introduced design to practice of enterprises Overseas study project; Employ foreign consultant.
Industry			
Internal design	Company lacks design awareness Design without high status.	Product policy program in 1921; design departments established in the Depression; Design function integrated in organization structure.	Design management refers to managing design section; internal design department established after the Second World War.
Industries	Poor performance of export industry; Manufacturing was surpassed by US and Germany after the Second World War.	Protectionism since 1791; From its beginning, industrial design is in the context of industry.	Obtain export market through technology and quality control.
Design Profession			
Design consultancy	A large number of design consultancies; Studies of managing design consultancy led to the emergence of design management.	Represented by the "big four", the 1st generation design consultancies emerged in the 1920s.	Modeled on US; Small number; Integrated with internal design with long-term relationships.
Design education	Started from the 1840s; Design management in MBA and MA.	Design management in MBA and MA.	Started from 1873; Modeled on the Western style.
Design management	Emerged in the 1960s from design consultancy; Limited to the academic field; Design management as an independent discipline and a separate category of management relating to design.	Emerged from Aspens Conferences in the 1950s; Design management in the context of business and in management profession.	Emerged from the manufacturing industry in 1957; Design is an essential element contributing to innovation management. Design efficiency.

The Japanese manufacturing industry developed significantly after the US changed its post-war economic restriction policy into a policy of expansion after the Korean War began. Overseas study projects and the use of foreign consultants established a solid basis for developing manufacturing, design and management. As a consequence, a large number of design schools and internal design departments were established. In addition, the modern management theory of Juran and Deming was adapted to Japanese conditions. Together with incremental innovation and quality control, it formed Japanese innovation management, which finally led to the “Japanese miracle” and a large market share in export markets. During this process, design played an

essential role in contributing to Japanese innovation management.

6. CONCLUSIONS

As this paper shows, the concepts of design management vary across nations and across stages of development. Different economic backgrounds may result in different understandings and practices of design management. In this study, the macro background of design management in three selected countries is supplied. Design development, design in industries, design consultancies, design education, the role of government in promoting design, and the development of design management were covered. The evolution-

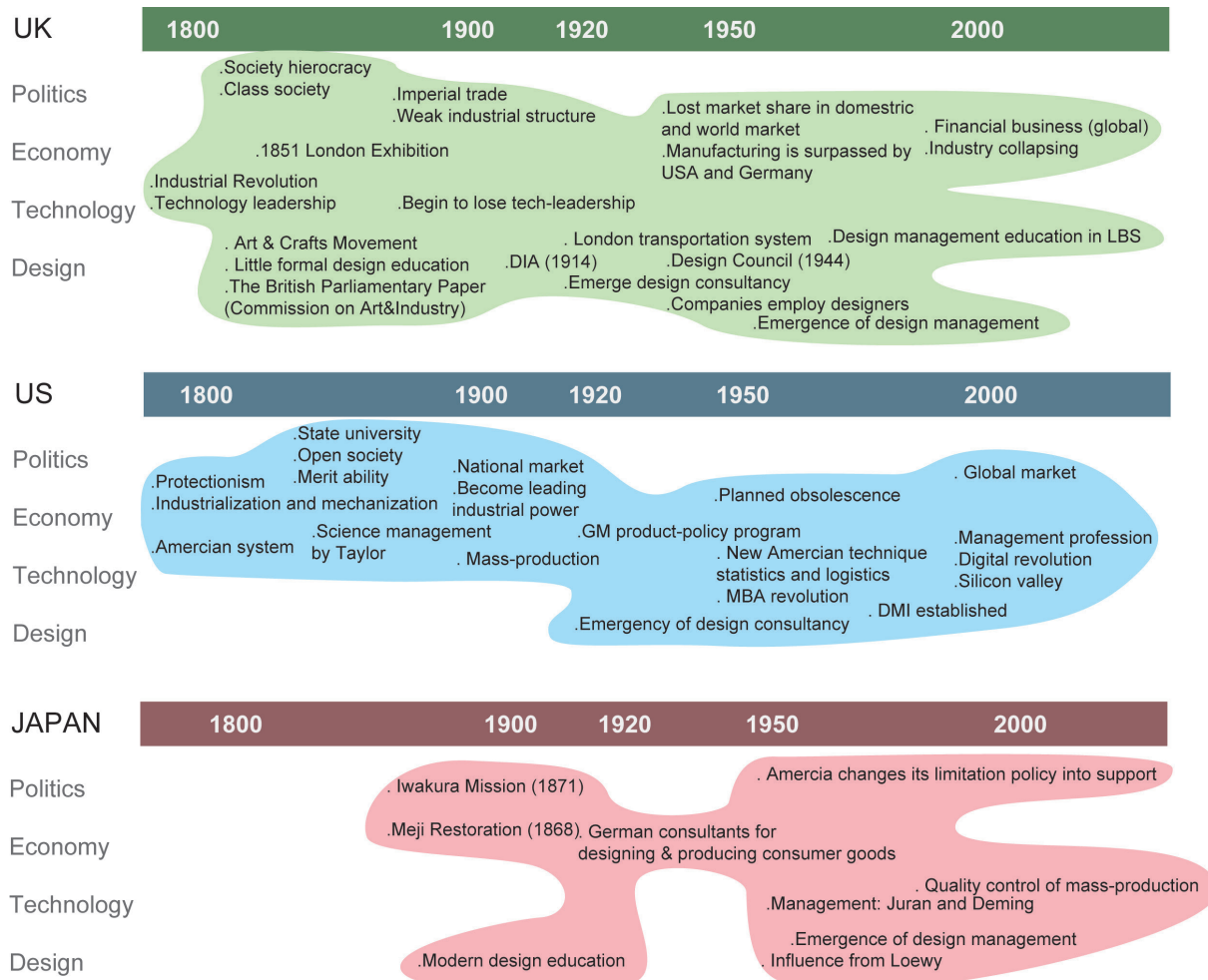


Figure 2. Time-line of design management development in the three countries

ary processes of these key areas, and different approaches to design management in the UK, US, and Japan were also explored.

Although the Industrial Revolution first took place in the UK, the country subsequently lost its technological-leadership and market share in the world. With a weak industrial structure, design is still not widely used in industries. Despite the fact that both the UK Government and academia endeavor to promote design management, their efforts have been criticized as being limited to theory and lacking in application. As a result, the UK approach to design management has become academic, and orientated to management relating to design. In the US, design was part of industry from the beginning, with the result that design management is now viewed as a part of the management profession. After the Second World War, Japan became famous for its economic miracle, to which Japanese innovation management substantially contributed. Design management initially emerged to find solution to upgrade design efficiency, and is now viewed in the context of process management.

Through reviewing the development of design management in the three countries and the influence of its background, this research proposes three different approaches to design management, which includes specific content and characteristics. This may help other countries formulate national strategies or policies to promote design practice and design management. Instead of copying or introducing other countries' approaches directly, establishing their own path based on a holistic understanding of origin and evolvement of design management as well as its relationships with local conditions is more useful.

As preliminary study, this research is limited in to three countries, the UK, the US, and Japan, because they have taken leadership in economy and design in the world. In the future, this study

may be extended to other countries famous for design, such as Sweden, Germany, or Italy to verify these factors and their influence on design management content. Since design management mainly originates from industrial design in the manufacturing industry, product design is the main discipline reviewed in this study. Other design disciplines, such as graphic design, environment design and communication design, are not involved in this study. However, these design disciplines may be researched in future works. Through extending research scope to other design countries and disciplines, the interaction of these disciplines and the factors identified in this study on design management will be explored. This will be useful for countries seeking to implement national design strategies and policies.

REFERENCES

- Aldersey-Williams, H. (1992). *World design: Nationalism and Globalism in Design*. New York: Rizzoli.
- Bangert, A. (2007). Between coolness a tradition: Design made in Japan. In JIDPO (Ed.), *Design Japan: 50 Creative Years with the Good Design Awards* (p.18). Berkeley, Calif.: Stone Bridge Press.
- Borja de Mozota, B. (2003). *Design management: Using design to build brand value and corporate innovation*. New York: Allworth Press.
- Chung, K. W. (2010). The nature of design management: Developing a curriculum model, *Design Management Journal*, 9(3),67.
- CNAA (1984). *Design management development project: Report of a series of five seminars*. London: Leicester, Bristol, Chorley and Brighton.
- Conway, H. (1977). The beginnings of product design? The American System of manufactures and design in America in the 1850s. In T. Bishop (Ed.), *Design History: Fad or Function?*. London: Design Council.
- Cooper, R. (2006). Design management step up to the mark? Paper presented at *D2B - the 1st International Design Management Summit*, Shanghai, PRC.
- Davey, A. (2003). *Detail: Exceptional Japanese product design*. London: Laurence King.
- DMI, (2009). *Facts sheet*. Retrieved March 7, 2009 from <http://www.dmi.org/dmi/html/aboutdmi/DMIfactsheet.pdf>
- Ekuan, K. (1991). A tribute and farewell to Lord Paul

- Reilly, Britain's leading design promoter, *Industrial Design*, 154, 75.
- Evans, B. (1990). The Japanese corporate approach. In M. Oakley (Ed.), *Design management: A handbook of issues and methods* (p. 393), UK: Basil Blackwell.
- Fischer, F. (1994). Japanese design: From Meiji to modern. In K. B. Hiesinger & F. Fischer (Eds.), *Japanese Design: A survey since 1950* (pp. 8-13). Philadelphia: Philadelphia Museum of Art in association with H.N. Abrams, New York.
- Formosa, K. & Kroeter, S. (2002). Toward design literacy in American management: A strategy for MBA programs, *Design Management Journal*, 13(3), 46-52.
- Hanks, N. (1975). Design for America's third century. In T. Schutte (Ed.), *The Uneasy Coalition: Design in Corporate America* (p. 93). US: The University of Pennsylvania Press.
- Hamilton, A. (1957). *Alexander Hamilton's papers on public credit, commerce and finance*. New York: Liberal Arts Press.
- Hauptman, O. (1992). MBAs meet industrial design: integrating design with technology and operations management, *Design Management Journal*. 3(3), 55-59.
- Hawk, L. D. (1990). New responses in Design Management. In M. Oakley (Ed.), *Design management: A handbook of issues and methods* (pp. 63-72). UK: Basil Blackwell.
- He, R. K. (1991). *Gong ye she ji shi [History of industrial design]*. Beijing: Beijing University of Sci. & Tech.
- Heskett, J. (2004). *Adding and creating value: By design*. MM Seminar 18th.
- Heskett, J. (2003). The desire for the new: The content of Brooks Stevens' career. In Adamson, G. (Ed.), *Industrial strength design: How Brooks Stevens shaped your world* (p. 1). Milwaukee, Wis.: Milwaukee Art Museum; Cambridge, Mass.: MIT Press.
- Heskett, J. (1998). The growth of industrial design in Japan. In N. Pollock, T. Hirano, T. Hakamada and the Art Institute of Chicago (Eds.), *Japan 2000: Architecture and design for the Japanese public* (pp. 83-94), Munich; New York: Prestel Verlag; Chicago: The Art Institute of Chicago.
- Heskett, J. (1984). *The role of the company in Japanese design*, unpublished paper.
- Heskett, J. (1980). *Industrial design*. London: Thames and Hudson.
- Hiesinger, B. K. (1994). Japanese design: A survey since 1950. In K. B. Hiesinger & F. Fischer (Eds.), *Japanese Design: A survey since 1950* (pp. 14-9). Philadelphia: Philadelphia Museum of Art in association with H.N. Abrams, New York.
- Jackson, A. Profession-Design reformers 1930-1950. Retrieved January 14, 2013 from http://vads.ahds.ac.uk/learning/designingbritain/html/crd_des-ref.html.
- JIDA (1992). The creative edge from a variety of standpoints, *Industrial Design*, 156, 61-64.
- JIDA (1990). Symposium Organizing Committee. JIDA Symposium: "Social evolution and design: toward design-oriented society". Special report. *Industrial Design*, 151, 38.
- Kato, H. (1991). What we should expect from design education Design's second dawning, *Industrial Design*, 154, 58-59.
- Kefallonitis, E. G. (2007). Foolproof design management education, *Design Management Journal*. 18(3), 23-28.
- Linton, I. (1988). *The business of design*. Wokingham, Berkshire, England: Van Nostrand Reinhold.
- Kiro. (1992). *Design management: Management of design, design resource and creative enterprise* (H. M. Zhong, Trans.). Taipei: Excellent Enterprise Management Consulting. (Original work published 1992).
- Lorenz, C. (1984). A resurgence at last for UK designers. *Financial Times*.
- Masuda, F. (1996). Trends in design consulting in Japan, *Design Management Journal*, 7(2), 27-31.
- Matsumoto, H. (1991). Design education as general education: The old and new curriculums, Its Present and Future in Japan, *Industrial Design*, 154, 30-32.
- Meikle, J. L. (2001). *Twentieth century limited: Industrial design in America, 1925-1939* (2nd ed.). Philadelphia, PA: Temple University Press.
- McAusland, R.(1993). Industrial design and the government, *Design Management Journal*. 4(3), 10-15.
- Murrin, T. J. (1990). Design for manufacturing: An imperative for US global competitiveness, *Design Management Journal*. 1(2), 37-41.
- Olins, W. (1986). The industrial designer in Britain 1946-82. In P. Sparke (Ed.), *Did Britain make it? : British Design in Context 1946-86* (pp. 59-70). London: Design Council,
- Powell, N. E. (1993). From the President, *Design Management Journal*, 4(3), 4.
- Pulos, A. J. (1993). *American design ethic: A history of industrial design to 1940*. Cambridge, Mass.: MIT

Press.

- Pulos, A. J. (1988). *The American design Adventure, 1940-1975*. Cambridge, Mass.: MIT Press.
- Russell, G. (1968). *Designer's trade: Autobiography of Gordon Russell*. London, Allen & Unwin.
- Sparke, P. (2004). *An introduction to design & culture in the twentieth century*. London: Routledge.
- Sparke, P. (1990). Great Britain: Eclecticism, Empiricism and anti-industrial culture. In C. Pirovano (Ed.), *History of Industrial Design*. Milan: Electa.
- Sparke, P. (1987). *Japanese design*. London: M. Joseph.
- Sparke, P. (1978). From a lipstick to a steamship: The growth of the American design profession. In T. Bishop (Ed.), *Design history: Fad or function?* London: Design Council.
- Topalian, A. (1985). Why managers need to consider design, *Marketing Week*, 81(5), 81.
- Tsuruta, T. (1990). A new role of industrial design: Task and perspective of in-house industrial design unit, *Industrial Design*, 152, 19-21.
- Ughanwa, D. O. and Baker, M. J. (1989). *The role of design in international competitiveness*. London; New York: Routledge,.
- Ulrich, K. T. and Eppinger, S. D. (1992). Educating product development leaders, *Design Management Journal*. 3(3), 47-52.
- Wang, S. Z. (1995). *Shi jie xian dai she ji shi, 1864-1996 [Modern design history of the world]*. Guangzhou: New Century.
- Woodham, J. (1996). Managing British design reform I: Fresh perspectives on the early years of the Council of Industrial Design, *Journal of Design History*, 9(1), 55-63.
- Walsh, V., Roy, E., Bruce, M. and Potter, S. (1992). *Winning by design: Technology, product design, and international competitiveness*. UK: Blackwell.
- Woodham, J. (1986). Design promotion 1946 and after. In P. Spark (Ed.), *Did Britain make it?: British design in context 1946-86*. London: Design Councils
- Waston, T. J. (1975). Good design is good business. In T. F. Schutte (Ed.), *The uneasy coalition: Design in corporate America* (p.57). United States: the University of Pennsylvania Press.
- Yamada, Y. (2003). New Japanese design. In A. Davey (Ed.), *Detail: Exceptional Japanese product design* (pp.167-9). London: Laurence King.
- Yoshioka, M. (1993). The path of internationalization within the JIDA and its future. *Industrial Design*, 160, 13.

