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PO Box 117
221 00 Lund
+46 46-222 00 00

Path Dependence, Change , Creativity and Japan's Competitiveness

Cornelia Storz*

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*Cornelia Storz is a professor of Japanese Economy at the Department of Business Administration and Economics and at the Centre for Japanese Studies, University of Marburg

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Abstract

After a decade of severe depression the Japanese economy shows signs of recovery, as the growth in GDP or the increased business confidence show. This paper discusses how these signs of recovery can be interpreted. Those who are sceptical towards the sustainability of its recovery often explicitly or implicitly refer to the concept of path dependence, which stresses the complementarities of the single elements of economic systems, always making change slow and incremental. The future of the Japanese economy thus has to be seen in a sceptical light since most of its factor markets - labour, knowledge or capital - are not able to adapt quickly to today's needs, such as flexibility or openness. This paper chooses a different approach. The main argument is that even in existing paths new, hitherto "unthought-of" solutions are possible, and that new paths can be developed out of established paths in an unforeseen way. Two sectors - the game software industry and e-commerce -, where considerable changes took place in a short time, will be discussed.

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Introduction¹

“Japan’s economy continues to recover.” – this self-confident statement of the Bank of Japan in August 2004 in its Monthly Report stands in sharp contrast to the pessimistic assessments of the Japanese economy in the 90’s². Indeed, there are signals indicating the long hoped-for recovery of the Japanese economy – may it be the drastically improved business confidence, the growth of GDP or the decreasing unemployment rate. At the same time, however, pronounced scepticism towards the further development of the Japanese economy is expressed, which refers mainly to still existing problems with all the important production factors, namely labour, knowledge and capital. In this view, the recovery may be not sustainable. Indeed, in international rankings Japan is placed on the lowest ranks. One problem the Japanese economy faces is obviously its path dependence of its established institutions. Path dependence is the key concept in institutional economics in order to explain why a desirable institutional change does not take place even if an increase in welfare for all people concerned could be expected. Relating to Japan, path dependence can be found e.g. in its national innovation system, whose needs are still oriented towards the needs of a developmental state, that is by catch-up institutions such as industrial groups, state targeting policies or an employment system aiming to produce of disciplined, loyal workers. Thus, the Japanese economy has major problems to solve. This paper starts from the concept of path dependence, but then goes one step further in analysing how path dependence can be overcome. The solution is found in individual and collective learning processes which are often underestimated in the concept of path dependence. Such learning processes are important since they can create new paths. They are taking place in several sectors of the Japanese economy which have been partially successful in terms of trade balances.

The leading question of this paper is therefore, which role path dependence plays for Japan’s competitiveness. The main argument is that even in existing paths new, hitherto “unthought-of” solutions are possible, and that new paths can be developed out of established paths in an unforeseen way. The paper is therefore structured as follows: In the first section, some indicators are listed which show signs of a recovery of the Japanese economy. Section 2 discusses selected unsolved problems of the Japanese economy by referring to

¹ The paper is based on a lecture at the Lund University, following an invitation in the context of the lecture series on “Focus Asia” in May 2004. The author would like to thank her hosts for the invitation.

² The Monthly Report publishes the main economic indicators on a monthly basis, hereby a helpful tool for students interested in actual developments of the Japanese economy.

two production factors: labour and knowledge. In both dimensions, international surveys show a backwardness of the Japanese economy. The problems of their change are analysed by referring back to the theory of path dependence. In section 3, the role of learning is discussed, arguing that the introduction of learning into the concept of path dependence leads to different assessments towards the potential of the Japanese economy. In order to understand how learning takes place, and how new paths can be developed, two case studies are introduced, one concerning new developments in electronic commerce, the other one concerning the development of a new type of entrepreneurship in the software industry. The last section summarizes the results.

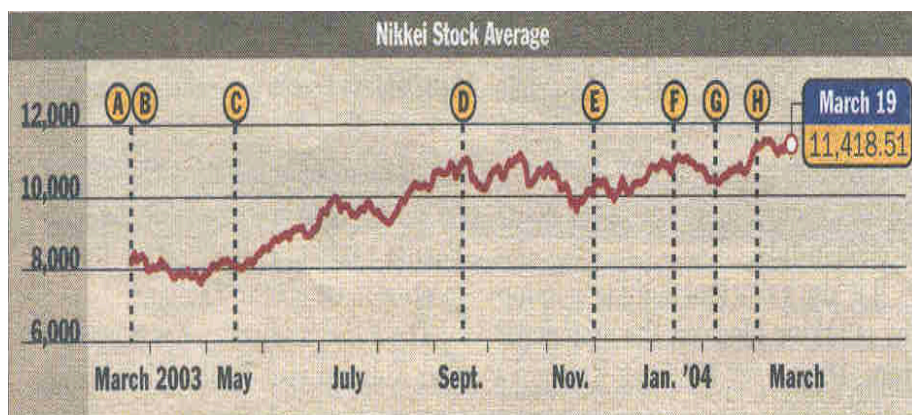
Japan's economy: Signs for recovery

Japan is one of the most important players in the international economy: Its GDP, the traditional indicator of welfare, is the second largest in the world; it is one of the leading nations in the world patents statistics, and even if one includes non-economic indicators, it is positioned among the leading nations³. The central role of Japan in the world economy is the reason why the interest in the recovery of the Japanese economy is great: A weak Japan can endanger the stability of the world economy.

The bursting of the speculative bubble in Japan in 1989 was followed by the long “lost decade” in the 90’s. Today, there are signs that the Japanese economy is on the path of recovery: May it be the GDP, the stock markets or the business climate – in all aspects the indicators show a change for the better. If one takes a closer look at the development, first, the situation on the stock market, here using the Nikkei Stock average, presents itself as follows:

³ One of the leading indexes is the Human Development Index of the United Nations (UNDP), where Japan is ranked below average in aspects such as infrastructure or equal rights for women, but reaches peak values regarding life expectancy or alphabetization.

Figure 1: Recovery of stock markets



Source: The Nikkei Weekly, March 22, 2004, p. 1

Remarks:

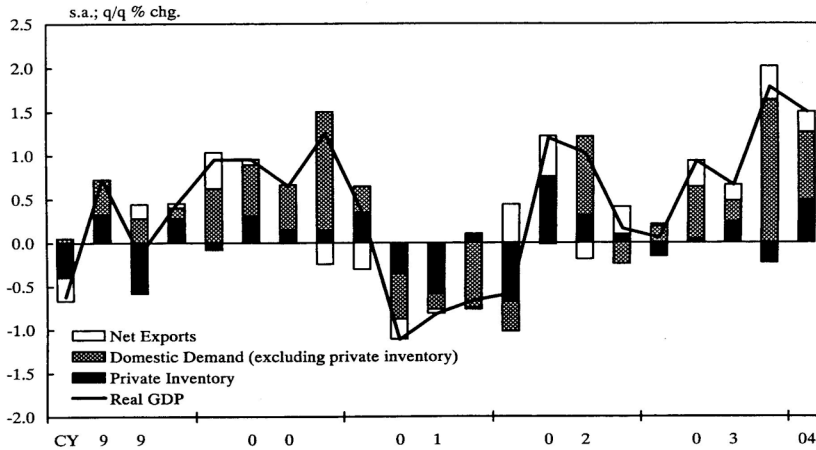
- A: Fukui takes office (March 20)
- B: Iraq war begins (March 20)
- C: Resona Group bailout decided (May 17)
- D: G 7 calls for yen rate flexibility (Sept. 20)
- E: Ashikaga Bank nationalization decided (Nov. 29)
- F: Yen hits 105 to dollar (Jan. 16)
- G: G 7 statement on forex volatility (Feb. 7)
- H: Greenspan warning on intervention

As figure 1 shows, the stock market improved remarkably by about 40% in the past year. The GDP shows an impressive growth as well: The annualised growth rate of the growth rate of the fourth quarter of 2003 is about 6%, one of the highest growth rates of the OECD member nations (Nikkei Weekly 29.3.2004).

Figure 2: Growth of GDP

Real GDP

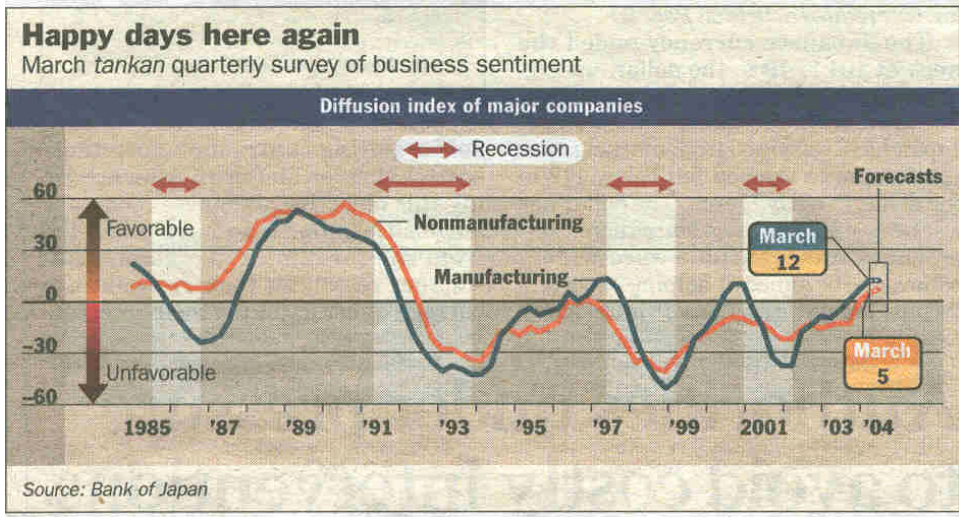
(1) Changes from the previous quarter (seasonally adjusted series)



Source: Bank of Japan:Monthly Report of Recent Economic and Financial Developments, August 2004

Another impressive change took place in business confidence which is the brightest since the last 13 years. The so-called *tankan* report which is carried out in 9000 enterprises by the Bank of Japan every quartal shows that business confidence is improving drastically (figure 3). Especially important is that confidence is not only improving among large manufactures, but among smaller manufacturers as well.

Figure 3: Tankan results



Source: The Nikkei Weekly, April 5, 2004, p. 1

The above-mentioned indicators are by far not sufficient, nor are they unproblematic – the annualization of growth rates is questionable, stock markets are not necessarily a mirror of the real economic development, and business confidence is not necessarily coupled with economic recovery - , but, nevertheless, in sum, the upward tendency of important economic indicators is remarkable.

3. Unsolved problems and path-dependency

3.1 Japan's competitiveness in international comparison

At the same time, however, problems still persist in the production factors labour, knowledge and capital: the capital and the labour markets are underdeveloped, and the Japanese system of innovation seems to be insufficient to adapt to the needs of new technologies. In leading international rankings such as the Global Competitiveness Report and the Global Information Technology Report of the World Economic Forum or the World Competitiveness Yearbook of the Institute for Management Development (Switzerland) Japan is placed in far behind the US, Sweden or Germany the last few years, in some reports even on the lowest rank (here: 2002 –2004).

Two of the reports were especially sobering for Japan: The Global Information Technology Report and the World Competitiveness Yearbook. The Global Information Technology Report assesses the environment of ICT (information and communication technologies) offered by a country and the readiness of individuals, businesses and governments to use ICT. The ranking of 2004 placed Japan at No. 20, far behind the leading OECD members (all in all: 120 economies). The estimation of the Japanese innovation system in the area of ICT is obviously not high. The results of the report were taken up intensely in the Japanese media (www.wef 2004).

The other report which demonstrated Japan's backwardness was conducted by the Institute for Management Development, measuring competitiveness in a very broad understanding by including sub-indices such as regulatory and market environment, macroeconomic stability, corruption, country credit ranking and ICT. The report of 2004 placed Japan at rank No. 23 (out of 49 countries), again far behind most OECD members. Referring to the production factors labour and knowledge, Japan got the worst assessments in entrepreneurship, creation of firms and flexibility and adaptability. In all these categories, Japan is holding rank 47 to 49 (www.boj 2004). Moreover, in regard to the past few years, Japan has improved in comparison to 2002 (from rank No. 27 to 23), but has fallen against the ranking of 2000 (from No. 23 to No. 21) (www.wef 2004).

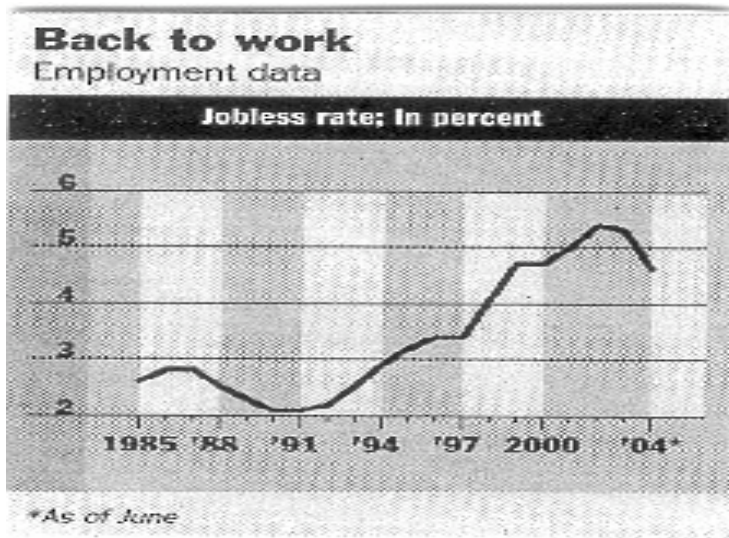
Even if such rankings are problematic since their analysis is often superficial, and reflect more the general mood than really being able to assess a country's competitiveness, they show at least that the expectations of the Japanese economy are not too high, especially not towards specific elements of its innovation system. Before this background it is not astonishing that special issues of renowned journals regularly analyse specific problems of the Japanese economy (Oxford Review 2000). Below, specific problems with the production factors labour and knowledge are taken up.

3.2 Labour and labour market

At first glance, the last few months have shown a positive development: The unemployment rate has slipped below 5.0% from a peak of 5.5% in January 2003, which means a reduction of 520,000 people. The total number of unemployed people was 3.2 million in July 2004, which is the 14th successive month of decline. Moreover, the job offers-to seekers ratio rebounded to 0.82 in June this year, meaning that for every 100 people looking for a job there are 82 job offers. There are still not enough jobs, but

it has been the best ratio for 11 years, and trend continues to be a positive⁴ (Nikkei Weekly, 6.9. 2004a & 30.8.2004).

Figure 4: Unemployment in Japan



Source: Nikkei Weekly, 6.9.2004a: p. 6

At the same time, however, personal income has barely risen: According to a survey by the Health, Labour and Welfare Ministry, wages have not increased by more than 1.5% a year since 1995, and have even fallen during the last two years. One reason is that the number of permanent workers has declined, whereas temporary workers have more than quadrupled over the past 10 years, leading to a share of temporary employment (with on average lower wages) which is much higher than in most other OECD member states. Moreover, the unemployment rate among workers aged 24 and younger was still 9.2% in June 2004, about double the average for all age groups. In international comparisons, not only the unemployment rate of adolescents and young adults is much higher in Japan than in Germany or the US, but also its growth rate (here: since 1990). Further increasing gaps exist along the line of gender-specific and region-specific unemployment (Nikkei Weekly, 6.9.2004a; OECD 2002a).

The reason for this specific development of the Japanese labour market lies in the fact that regularly employed people are – informally – protected: The

⁴ The Nikkei Weekly has already asked whether the problem will fast become a “non-issue” since the retirement of baby boomers may lead to labour shortages in the near future (Nikkei Weekly 6.9.2004b).

duration of employment is still the second longest among OECD members⁵. The problem to adapt to lower or even minus growth rates is mainly solved by closing the club, thus leading to a functioning (but closed) internal labour market, with the consequence of high unemployment in the group of those who have not yet entered the labour market, as especially young people. The exclusivity of labour markets and the underdeveloped external labour market lead to severe problems: From a socio-economic point of view, problems with the socialization of young people may occur where firms hitherto played an important role. From an economic point of view, exclusive markets are a barrier to technical progress since start-ups become very risky (one reason why Japan is ranked so badly as regards entrepreneurship) and career options for specialists cannot be developed (a problem especially with ICT). Lastly, efficiency and profitability are low (OECD 2002b). Thus, as early as in 1995, Nikkeiren, that is the Japan Federation of Employers Association (today merged with the leading enterprise association Keidanren), recommended a new structure of employment in its well-known “*Shin Jidai no Nihonteki Keiei*” (Japanese Management in a New Area). The OECD Job Surveys followed the same line of argument, calling for more deregulation in the Japanese labour market. With public reforms on one side (e.g. the reform of the Employment Security Law 1999) and reforms by private actors on the other side (e.g. increase of mobile specialists) some important steps have been taken. But still critics have come to the conclusion that the success of the reforms was limited: Re-regulation often follows deregulation, and the preference for internal markets even increases, if one takes a closer look at selected industries (compare e.g. Shire 2002).

The limited success of reforms can be explained by path dependence: Uncertainty, often prohibitively high cost of changes and complementarity hinder the implementation of reforms despite their obvious need. A new management system is difficult to design since the present model of the labour market and the “Japanese style management” have been very successful – so successful that the international management literature identified them as a central source for Japan’s economic progress – ; it is highly uncertain, what a new and again successful model could look like, leading to an adherence to the established system. Other reasons for path dependence are high costs of changing, which can be found on the macro-level, where e.g. social policy has to be developed for the first time, and on the micro-level, where e.g. supervisors in private companies are unfamiliar with performance appraisals

⁵ Here: only male employees. If one refers to males and females in total, Japan is at the OECD average level.

and have to learn new forms of evaluation. The development of a new type of labour market therefore causes learning and realisation costs, which backs up its rigidity. The most important role, however, is played by the factor of complementarity: The complementarity of a lack of social security and permanent employment (unemployment in Japan leads to more drastic consequences for the individual than in countries with open labour markets or with an elaborated labour market policy), the complementarity of specific skill formation and closed labour markets (qualifications between companies cannot be transferred), and the complementarity between companies' behaviour and social values as reflected in court decisions (which stress the social responsibility of enterprises, leading to protection against unlawful dismissal; the laws being one of the strictest of OECD members)⁶.

3.3 Knowledge and the national innovation system

Knowledge is the most important source of welfare, since it is the only factor of the economic production factors which can be increased. Therefore, the nation's positioning of its innovation system is of central importance for its further economic development.

On the surface, the results of the Japanese innovation system are good: despite the long phase of economic weakness in the 90's R&D activity is high (a development contrary e.g. to Germany), the R&D input in relation to the GNP is with 3.25% higher than in the US or the EU (with 2.67% and 1.88% respectively), and its technology trade balance is positive too (below the US, but higher than Germany) (compare for details Kevenhörster, Pascha und Shire 2003). Nevertheless, deep-rooted problems exist: the Japanese innovation system is characterized by incremental process innovation, by diffusion and dissemination and by a long-termed learning along vertical co-operation. In other words: the inward orientation is as in the labour market relatively strong; even intra-firm cooperation is no real external co-operation since suppliers are often in fact part of an enterprise group. Compared to this, external co-operation e.g. with universities as suppliers of original knowledge is underdeveloped, as well as the transfer of knowledge out of universities into enterprises. All characteristics that seem to be the reason for the success of Japanese companies in the 90's seem to hinder today the development of radical innovation. Therefore, Japan's world wide share of R&D intensive goods is low: Its share in world trade of knowledge-intensive goods (goods with a share of research & development of more than 3.5% of

⁶ A new volume analyses the development in Japan together with other Asian countries from the point of view of institutional economics (Pascha & Storz forthcoming).

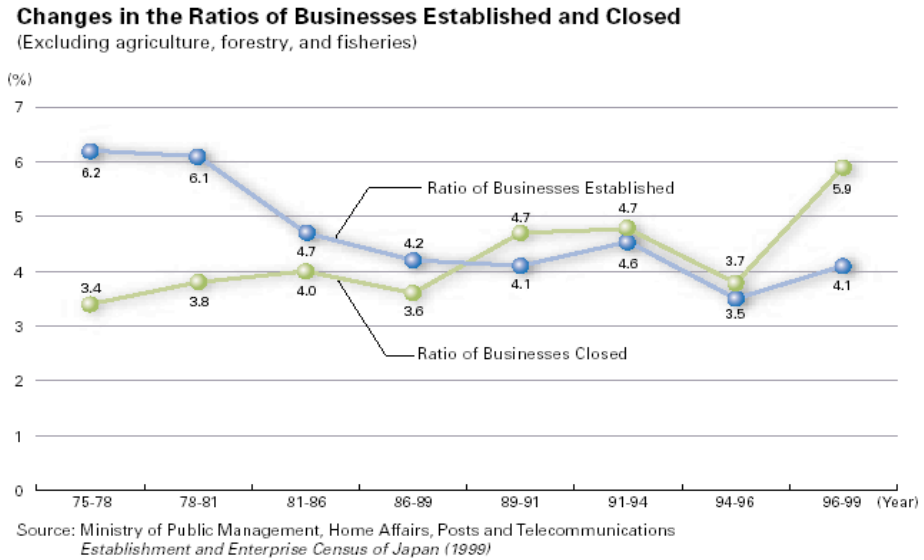
the turnover) is about 14%, in contrast to the US with about 21%. This is especially impressive since in 1992, the share of the US and Japan was with 18-19% still about the same (BMBF 2000)⁷.

The software industry with its low share in the world market is one of the knowledge-intensive industries in which Japan's competitiveness is weak. This might be dangerous since the ICT industry, in which is the software industry is part of, is assessed by the OECD (2001) as a "driver of growth", and by other authors as a new general purpose technology. It seems to be risky not to be present in this industry. ICT needs standardized interfaces, open co-ordination and a flexible combination of modules. The dominant design of Japanese industrial organisation is almost the opposite of these needs since Japanese enterprise groups (*keiretsu*) are characterized by group-specific, integral-closed structures – an observation which led Anchordoguy (2000) to the question whether the poor success of Japan's software industry is a failure of institutions. If one follows the thesis that important new industries such as biotechnology require similar open structures, then the competitiveness of Japan can indeed be questioned (compare too: Lynn/Kishida, forthcoming; Baldwin, 2001; Kokuryô, 1997).

Another indicator which is often used to assess the dynamics of an economy is the entrepreneurial climate in a society. According to the ranking of the Institute for Management Development, in this respect Japan is ranked lowest (No. 49). Indeed, the number of companies has been shrinking in Japan for several years (figure 5). Even if an equalisation of the start-up rate and innovation is problematic since it excludes the fact that start-ups are not necessarily innovative, but often franchised companies in retailing or services without innovative potential, the low level of start-ups can be interpreted as a signal of a deficit in pushing through radical innovations; moreover, it reduces chances in the creation of employment.

⁷ The development for Germany follows exactly the development lines of Japan.

Figure 5: Creation of firms



Source: www.kokuin 2004

The characteristics of the Japanese innovation system are of central importance for the (continuing) success of the assembling industry, but have obviously led to weaknesses in the field of new technologies. This insight was a shock for Japan's public actors, and has led to increasing public input into R&D (which is remarkable since it contrasts with most other OECD member countries), to deregulations supporting a higher mobility between universities and private actors, deregulation in venture capital markets, and a more active participation in international standardization organisations (comp. Storz forthcoming). One important background for these reforms was the revised Science and Technology Basic Law of 1995.

Nevertheless, the success of reforms – may it be the mobility of knowledge out of universities, may it be changes in the venture capital market, may it be the internationalisation – are evaluated sceptically. The fact that they are accompanied by uncertainty (how to design a “better” innovation system?), by high costs of changes (e.g. building-up of new education systems) and by complementarity (e.g. between radical innovation and underdeveloped capital markets) seems to make institutional change difficult. Especially in the ICT industry the factor of complementarity is important, since enterprise-specific systems make individual changes almost impossible (comp. Storz 2003 a&b).

The problems of changing innovation systems have been analysed in depth by literature that focuses on national (or local) innovation systems (or: clusters). They present enough evidence that a change is difficult, that the danger of lock-in is given, and that structures of the path influence decisively the development of the future (compare Dosi 1994; Freeman 1994). The Japanese case is therefore not specific. Coming back to the leading question of the competitiveness of Japan, path dependences in its innovation system make a change to a new system difficult and are an obstacle to a sustainable recovery. The established institutions are unable to meet the new challenges. The following section will discuss options for leaving existing paths by referring to learning theories and two case studies.

4. Learning, combination and creation of paths

4.1 Concepts of learning in learning theories

Learning mainly takes place in two forms: as a routine-based process, and as a reflexive process of problem-solving⁸. Learning as a routine-based process means that, in the most simple version, learning follows certain stimuli, such as e.g. in the well-known experiments of the physiologist Pawlow. In a broader understanding, instrumental learning which refers to learning according to expected rewards and punishments belongs to this type as well. Model-learning as Bandura understood it, namely as a learning process that takes place through observation of other persons and the assessment that their behaviour may be more successful than one's own belongs to this type as well. All these types have in common that the learning situation and the signals how and into which direction behaviour should be changed are relatively clear. In this understanding, learning takes place in routines.

Non-routine situations which are not clearly structured and are characterized by a high degree of uncertainty, need a higher degree of individual reflection: Individuals have to develop their own logic, and their own problem-solving strategies. Learning processes in such situations cannot follow any longer a specific logic of the system, but need much more internal control. In order to handle uncertain situations several strategies exist, such as trial and error, or creativity and restructuring (that is the combination of two elements that are far remote from each other). Access to information and an

⁸ For learning theories compare Brenner (2001) and Edelmann (1996).

intrinsic motivation to learn are important preconditions of the learning process.

In this context, Vanberg and Buchanan (1994) have identified the learning process of preferences which is the basis for behavioural change. They propose to divide preferences into theory-related and subject-related components. The theory-led component can be tested and is therefore objective from a scientific point of view; the subject-related component is only subjectively correct. In order to change learned behaviour, it is necessary to assess individually whether and to which degree a given preference has led to a desired aim. If the individual concludes that this was not the case, then it may be possible to change one's preferences. With this understanding, the change of preferences can be used in economic theory too.

To summarize: The individual cannot leave existing paths, but it can develop new paths by learning new preferences and new behaviour. Trial and error, creativity and restructuring are important tools to change one's behaviour and to develop new paths.

4.2 The invention of personalised Internet shopping

The following two case studies briefly describe options of how it is possible to develop new paths. Both case studies refer to the production factor of knowledge in a very specific segment, and both have to do with the ICT sector. In both case studies, innovation by restructuring and creativity takes place, and, to a different degree, a change in preferences and behaviour.

The starting point of the first case study is the Japanese electronic commerce which is underdeveloped in international comparison. B2C commerce, as it is called, refers to the transaction between a supplier and a consumer. Its volume in Japan is about a tenth of the volume in the US, and its growth rates are below the American rates as well. The distance to Europe is great, too. One reason behind the different levels can be identified in different types of trust, which can be characterised in the US by a dominance of generalized trust, and in Japan by a dominance of person-based trust (Yamagishi 1998). In relation to e-commerce, the lack of generalized trust in Japan leads to problems in the acceptance of the institutions of e-commerce (Kitamura/Ôtani/Kawamoto 2000). The interesting point in this context is, firstly, that *because* of existing paths of different types of trust, a new form of internet shopping has been developed, and that, secondly, new preferences and new patterns of behaviour have been learnt.

The first point refers to entrepreneurial acumen: The problem of a lack of generalized trust was solved by putting convenience stores – a kind of

innovation champions in retailing in Japan since the 1970's⁹ - as intermediaries into Japanese e-commerce. Hereby, the hitherto anonymous e-commerce (order by PC, payment by credit card, delivery to the home) becomes an "e-commerce with a face", since the customer can pay in the shop and, if desired, pick-up their orders there (which is convenient because convenience stores are opened all day, and they are located close to customers). It is a clear sign for the success of their strategy that today more than 75% of all Internet shopping is realised via convenience stores. Moreover, the successful export of this strategy to other Asian cities shows that clever combinations in existing paths (here: stationary trade + internet) can produce unique new facilities, which may even become a competitive advantage.

In Japan, e-commerce therefore takes place via agents, so that consumers can rely on well-known routines. Thus, referring to the second point, the learning of new behaviour and preferences, it is interesting that generalized trust into the institutions of e-commerce can be built-up incrementally. One indicator for the change of behaviour is the above-average growth of mobile commerce, which is becoming an important pillar of B2C-commerce in Japan. Thus generalized trust is not given, but can be built up (METI 2001; Rapp & Islam 2003; Storz 2000; Whipple 2000).

4.3 The invention of a new media industry

The second case study again presents evidence that creativity and restructuring can lead to innovation which may lead to a breaking away from a given path. The difference to the case study above is that the driving forces for the "break-away" are not established innovation champions, but individual entrepreneurs. Moreover, in this case, the behavioural change does not take place on the side of consumers, but on the side of producers. Nonetheless, the joining factor of both case studies is that innovative products (new type of retailing, new type of design of products) are developed away from existing paths.

According to the OECD, the digital media industry is expected to become one of the leading sectors of the future (OECD, 2004). Japan's position in

⁹ Convenience stores are a specific type of retail shops which is the most successful type of retailing in Japan. It is based on a comprehensive orientation towards service, which is made possible by a sophisticated ICT infrastructure. They are opened 24 hours a day and offer their products – commodity goods and fresh food - in a relatively small space. They are convenient in different aspects: They are not only located closed to customers but they are also small so that time for shopping can be saved, they are opened all day, and due to their excellent ICT infrastructure, they offer the product or the service that is just needed.

this sector is so strong that Business Week asked in a somewhat provocative article whether American agencies in the media industry will be able to change their traditional function of a mainly nation-based distributor to an import agency of (mainly Japanese) cultural products (Business Week 2004). This is definitely somewhat exaggerated since significant weaknesses in the Japanese media industry can be identified as well (e.g. problems with copyright regimes), but as a whole, the development opportunities are impressive. As for Japan, its success in the game software business is remarkable, leading already today to a high trade surplus (METI 2004a).

Innovation in the sector of games is driven mainly by young enterprises which are “unusual” in several aspects – their methods of recruiting, their specific innovation management, their personal background. Moreover, individual creativity plays a central role, which in the Japanese context is a noteworthy new competence, since traditionally, innovation resulted out of the integral connection of research & development, production and distribution. The acquisition of new competencies in design is a highly uncertain learning process, offering no models for orientation. Another learning process is the development of a new sector which hitherto did not exist: This included trial and error (e.g. closure of young start-ups) and creative combinations of existing, but totally diverse experiences, such as e.g. the combination of Japanese comics (*manga*) with customized software and electronic hardware (Marubeni 2004; METI 2004b). Thus, a new sector with new types of businesses was developed, surprisingly in the software industry in which Japan has seemed to be weak.

5. Conclusion

The Japanese economy has experienced a full decade of stagnation. For about one year, several economic indicators have seemed to point to a recovery of the Japanese economy. The data is often impressive, showing better results than other OECD members. Critics counter that this development is not necessarily sustainable. They argue that it is necessary to leave the superficial level and to analyse development options on a deeper level where still unsolved and serious problems exist. In order to analyse these problems, it is obviously necessary to take a comprehensive view, and to analyse different economic indicators in detail. Such a general analysis is not the intention of this paper. This paper focuses on a specific question of the economic development in Japan, namely when and under which conditions existing paths can be left, and new paths can be created.

Indeed, if one takes the economic production factors – labour, knowledge, capital – as a starting point for an analysis of Japan’s competitiveness, the economic situation has to be assessed prudently. Especially if one refers to the most important production factor of “knowledge”, Japan possesses weaknesses: It is e.g. hardly present in leading knowledge-intensive industries where American enterprises are leading the world market. The reason for Japan’s backwardness can be found in the persistence of the established institutional set, which does not fulfil the needs of a catch-up development by having established specific developmental institutions, and which does not meet the needs of these new industries for which an open industrial organisation with external interfaces, a developed capital and labour market and a stricter competition policy would be helpful. Especially the exclusive industrial organisation and the industrial-policy oriented economic policy are leading into an unfavourable direction in new industries such as the software industry. The “failure” of Japanese institutions to meet the new challenges has become a familiar quotation.

The concept of path dependence is important in order to understand why institutional change is often rigid. At the same time, however, the question should be posed of how institutional change can be triggered. This paper referred to two case studies, to the software industry as the central pillar of the ICT industry, and to the retailing industry, where the success was partially due to a clever use of ICT. In both cases, innovative solutions were developed out of existing paths: In electronic commerce, the lack of generalized trust was counteracted by combining Internet shopping with local agents, hereby eventually paving the way to the development of generalized trust; in the software industry, two hitherto independent and totally diverse elements were creatively combined, namely the tradition of Japanese comics with customized software and electronic hardware. Both innovations were successful, as the export of the “Japanese-style” e-commerce model to East Asian cities, or the surplus in the trade balance of games software demonstrates. Since breaking away from paths is a general option, it is not a phenomena only of today: The Japanese network in *keiretsu* organisations, which has been successful in the assembling industry until today, can be explained mainly by the fact that the restrictions caused by underdeveloped capital and labour markets in the 1950’s did not offer any other chance than to develop their own, creative ways to overcome these shortages, namely to build up intense networks instead of relying on market mechanisms. It is therefore important to define the options that exist in given paths not too narrowly, since in existing paths or at the edge of existing paths there are manifold options for action. What is

important for an economy's development is whether actors exist who initiate break-away activities. In the case of e-commerce, we identified such actors in the form of the convenience stores, which are established innovation champions; in the case of the games software industry, we identified individual entrepreneurs. It may be too early to draw a general conclusion from limited evidence, but based on the sketched theoretical outline above it seems that for the economic well-being of a society it is important how much room for learning is permitted, and how learning is stimulated. As for Japan, it seems –again with the restriction of limited evidence – that the potential of entrepreneurship and clever entrepreneurial solutions is underestimated.

It should be added that it is a presumption for anyone to believe that they know which industries are the industries of the future. Japan's competitive industries of the future may lie in different sectors than in other OECD countries, but this is not to say that Japan's competitiveness is low. A different question is which institutions could stimulate which kind of learning processes in a society. On a more practical level, the factors influencing Japan's competitiveness has to be analysed much more comprehensively and more in depth. Moreover, it is open as to which criterions should be used in order to assess the success of an industry – several contributions come to the conclusion that e.g. Japan's software or biotechnology industry is by no means a failure. The answers to these questions remain an important further research field.

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