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Silver Business in Japan

Implications of Demographic Change for Human Resource Management and Marketing

A study based on a company survey by the German Chamber of Commerce and Industry in Japan (GCCIJ), the German Institute for Japanese Studies (DIJ) Tokyo and the Institute for Technology and Innovation Management at Hamburg University of Technology (TUHH)

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Summary of the most important facts

- If by 2015 more than one quarter of the Japanese population is over 65 and from 2025 onwards more than half of the population is over 50, to what extent will these numbers affect your business in Japan?
- Are you prepared for a possible labor shortage?
- Do you know how many of your most important intellectual assets will retire in the next two to three years?
- Do you have the right instruments and mechanisms in place to prevent any loss of knowledge?
- The younger generation customer base is shrinking, what will happen to your sales?
- The silver market has a lot of opportunities and potential are you making the most of them?

The deeply rooted changes in the structure of the Japanese population raise a number of critical questions that companies need to address. Demographic change is already influencing human resource management, marketing and sales in many companies today. This trend is likely to continue.

Although in times of a global economic and financial crisis, many companies are dealing with topics that seem to be more urgent, German companies doing business in Japan need to face the challenges of demographic change if they want to be successful in this market in the future. At the same time, being engaged in a rapidly aging market like Japan provides the chance to learn early from successful examples and solutions and apply them to the global market situation. Demographic change reflects a global megatrend affecting all industrialized European countries and, with some delay, also several of the emerging markets.

The aim of the present study is to assist German companies in meeting the challenges of demographic change in Japan and in better tapping the potential of the "silver market". Additionally, it will provide some information on how companies can turn the potential demographic crisis into an opportunity.

The study is based on an online survey by the German Chamber of Commerce and Industry in Japan (GCCIJ) jointly conducted with the German Institute for Japanese Studies (DIJ) Tokyo and the Institute for Technology and Innovation Management at Hamburg University of Technology (TUHH) located in Germany. Between May 23 and July 14, 2008 the survey asked 411 German companies in Japan about the implications of demographic change on their business in Japan. The analysis was carried out based on 135 completed questionnaires, which corresponds to a representative response rate of 32.8 percent. The responses stem from various industry sectors, primarily from the areas of machinery and engineering, automotive, consumer goods, services and healthcare.

The key points of the questionnaire were, on the one hand, the challenges and threats posed by demographic change such as labor shortage, loss of knowledge and a shrinking customer base, but, on the other hand, new business opportunities.

Learning from Japan

Challenges and Opportunities

In addition to the survey, interviews were carried out with selected German companies in Japan to add experiences to the quantitative data as well as case studies and best business practices. The interviews took place from March 20 to April 3, 2009 and consisted of face-to-face meetings with 20 company representatives from various industry sectors. Furthermore, the study also includes examples of management strategies and successful products of Japanese companies.

"Summary of the most important facts"

Demographic change is a global phenomenon. The aging and shrinking of the population – a trend particularly advanced in Japan – poses new challenges and responsibilities to society, companies and organizations – but it also offers new business opportunities. Challenges arise particularly in the areas of human resource and knowledge management. For German companies the silver business offers opportunities in the Japanese market and enables them to acquire expertise regarding global business strategies.

Human resource management

- Almost two-thirds of the German companies surveyed predict a workforce crisis in Japan.
- The combination of the elderly, who wish to work, and the raising of the legal retirement age increased the number of employees older than 60. The majority of the companies surveyed are already offering their employees continuing employment when they have reached the standard retirement age.
- Along with the increasing average age of employees, companies have to adjust to different needs and may even need to modify the workplace or implement special safety measures.

Knowledge management

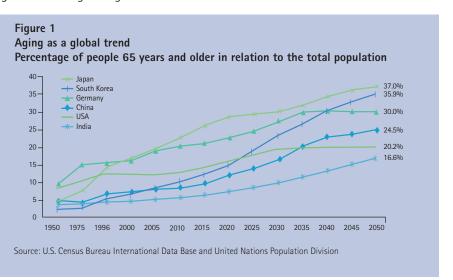
 Only about half of the surveyed companies are systematically preventing loss of knowledge when employees leave the company. For this purpose, several procedures are implemented such as those involving databanks, follow-up project reviews and group discussions as well as mentoring and coaching activities.

Marketing/Product development

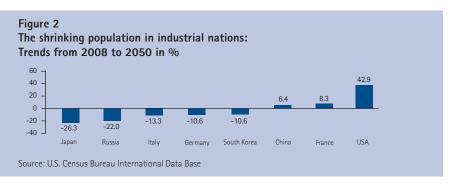
- Around 90 percent of the surveyed companies are aware of interesting future business opportunities in the silver market.
- In contrast, only around 8 percent of the companies conduct market research among seniors, only around 7 percent of German companies develop products to meet the needs of older customers and only around 8 percent of companies engage in senior-oriented marketing.
- One in four companies already feels the direct effects of demographic change on their businesses, especially in the form of declining sales and changes in the number of customers. Some of the German companies, however, also reported rising sales and profited from demographic change in the market.

Demographic change is a global phenomenon

Demographic change is a global phenomenon. An aging and also shrinking population can be seen in almost all industrial nations, but also in some of the developing countries (Figures 1 and 2). This change in the structure of the population has effects on society and the economy. Companies around the world need to adjust to older employees and customers as both have needs quite different from younger generations, who are currently in the spotlight of marketing strategies.



Japan is currently experiencing the fastest demographic transformation among the leading industrial nations, but it is not the only country towards which the age wave rolls. Germany, for example, is also heading in a similar direction. The aging population and the drop in the birthrate are issues currently facing the domestic market and local companies in Germany. Without doubt, demographic change will be one of the challenges that multinational companies will need to face in the near future. The experiences encountered in Japan may provide not only valuable insights into the societal implications of demographic change but may also uncover trends, opportunities and innovative approaches for developing markets.

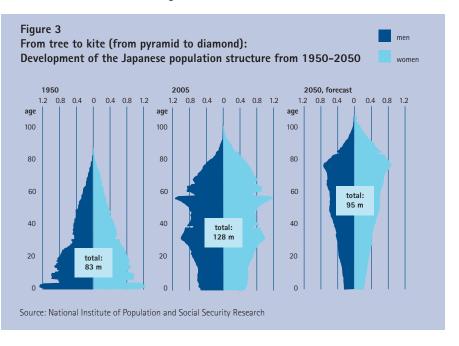


In 2005, Japan's population declined for the first time along with its workforce. Should no measures be taken to increase the number of seniors and women in the business world, the working population will dramatically decline. According to predictions of the Cabinet Office, the labor force of 66.57 million in 2006 will decline to 42.28 million by 2050. By 2030, a decline of more than ten million consumers is already feared. Predictions tell us that one quarter of all Japanese people will be over 65 by 2015 and one third of the population by 2025. It is a phenomenon that affects men and women equally.

Japan as a forerunner

Japan's population is aging and shrinking

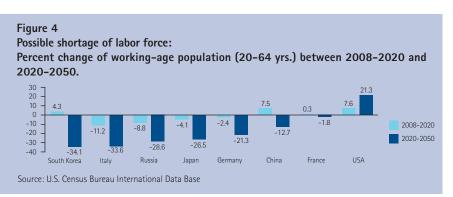
Japan's population structure will deviate more and more from the traditional shape of the population pyramid. In coming years it will have the shape of a diamond, the classic demographic structure will literally turn upside down. The number of senior people in Japan will increase further while the population in general will decline to 95 million by 2050 due to the low birthrate (Figure 3).



Baby boomer retirement

Along with the alterations in the population structure, the labor force will decrease more and more in many countries (Figure 4). In Japan, this development was known as the "The Year 2007 Problem" (*nisennananen mondai*), the name given to the anticipated retirement of the baby boomer generation from 2007 onwards. The Japanese baby boomer generation consists, by definition, of those born between 1947 and 1949 and comprises a significant percentage of the labor force. Taking the broader definition into account, which includes the years from 1950 to 1951, there are a total of 10.7 million people in Japan in the baby boomer generation, of which 8.2 million belonged to the labor force in 2006, more than 12 percent of the entire labor force.

Originally, it was anticipated that a large percentage of these baby boomers would retire when they reached their 60th birthday between 2007 and 2009. The expected retirement wave in combination with the aging and shrinking population would have caused severe problems on a micro- and macroeconomic level. For one thing, a large percentage of the potential retirees were knowledge experts, for another thing, the looming labor shortage was a cause for worry.



Labor shortage and loss of expert knowledge

Companies need to expect that sooner or later the work pool of younger Japanese people is going to decline considerably. This development – paired with a shrinking total population – will force companies to adjust to a higher average age of their employees in the coming years. Furthermore, work procedures and the working environment are likely to change in the long-term as older employees at the workplace have different physiological as well as psychological capabilities and needs.

The risk of losing expert knowledge Among the aging employees there are often experts, whose approaching retirement may lead to loss of know-how and experience. This is of special concern if the people of the baby boomer generation, such as in Japan, all retire at the same time and a company has to cope with the loss of several experts. Another important factor that comes into play is the Japanese approach to managing knowledge in organizations, which is based on intrinsic know-how, which is difficult to encode and thus to store in a database. Since Japanese companies focus on the direct transfer of know-how via personal communication and interaction, there is a largely intrinsic knowledge base that has never been externally documented, that is, translated from tacit to explicit knowledge. Now, this know-how may "leave the company" when the baby boomers retire. Moreover, the need for systematic and explicit documentation of knowledge is far less important in companies with a traditional Japanese employment system - lifetime employment and the principle seniority - as in companies with a higher turnover as it is the case for many companies in Europe and North America. Know-how in Japanese companies is mainly passed on personally - during working hours and during social occasions in the evenings via "nomunication" (Japanese nomu = to drink) - and intrinsically in the context of onthe-job training. Of course, this requires time, and thus the simultaneous retirement of several experts creates a significant problem.

> The anxiously expected retirement wave has not yet occurred. According to the "Labor Force Survey" of the statistics office of the Japanese Ministry of Internal Affairs and Communications, the number of employees aged between 60 and 64 increased between 2007 and 2008 by 9.3 percent. This statement clearly challenges the assumption of a large number of retirees in this age group. A recent baby boomers survey conducted by the "Japan Organization for Employment of the Elderly and People with Disabilities" painted a similar picture (August 2008): 20.6 percent of the surveyed baby boomers said that they were not working. More than three quarters are still working full-time and about the same number said that they were still working due to financial necessity. Another observation, which goes against the retirement wave theory, is the high percentage of employees older than 65: 32 percent of men and 15 percent of women are still working, even if they are mostly self-employed. Since 2005 - the year before the amendment of the "law for employment stabilization of the elderly" - the number of regular employees aged between 60 and 64 increased by 64.3 percent and the number of those who are older than 65 increased by 83.8 percent, a clear consequence of the amendment, which went into effect in 2006. Companies, whose retirement age is less than 65, have therefore the option to modify the internal retirement policy by offering continued employment or simply abolish the retirement age. The target is a retirement age of 65 by the year 2013 (see Figure 5). Companies should have the option to offer continued employment beyond this age.

Silver Business in Japan

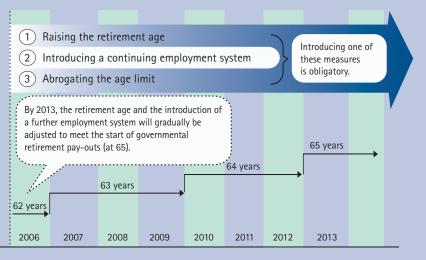
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No retirement wave

Irrespective of when exactly a particular generation retired or will retire, in 2007, a retirement wave did not occur. Moreover, in changing the retirement age exclusively to 65, a subsequent "2012 problem" does not seem to be realistic in light of the numerous options for companies and employers as well as of the effective retirement age of almost 70. Despite this, the challenges associated with an aging and shrinking population continue to exist, as do the problems corresponding to aging staff and labor shortage that require solutions in all areas of corporate strategies.

Figure 5

Legal aspects concerning employment stabilization of the elderly Measures for securing employment for the elderly (amendments 2006)



Source: Ministry of Health, Labour and Welfare

The golden silver market

Demographic change will also shift market segments: in considering the number of young people, a declining youth segment can be anticipated, which behaves in the opposite way to the continuously growing senior segment. In fact, many market participants are worried about the shrinking customer base of young, dynamic buyers and the demands of an older target group, which is still largely unknown. Thus, demographic change could cause problems for companies that do not adjust their product range or do not include new target groups as potential customers. The number of potential customers, however, does not determine alone new business opportunities: purchasing power and consumer behavior play a significant role and can possibly compensate for the declining number of customers.

Currently, the business world is highly attentive to the baby boomer generation, which represents the most important group of older customers. In Japan, the baby boomers were always highly active, energetic, consumer-oriented and formed a wealthy subgroup, being curious about technical innovations and having a shopping-related mentality. Along with retirement comes newly gained free time. This is the reason why the baby boomer generation, which has high purchasing power and consumer acceptance, is a very attractive potential target group for companies in the silver market. Moreover, seniors tend to spend their accumulated income and wealth instead of concentrating on savings and investments. Japanese private households with heads 50 years of age and older spend considerably more money per head than the age group between 30 and 49 (Figure 6). The high purchasing power of seniors also provides insight into their financial wealth: Japanese households with heads 60 years and older have, on average, assets of more than 24 million yen, or more than 180,000 euros. Seniors are therefore the top group of all age groups in terms of assets. Rounded down per person, the generation of

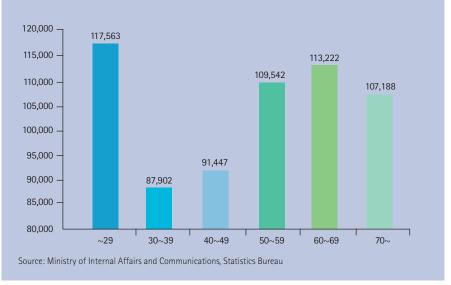
Baby boomers with high purchasing power

Demographic change – a global megatrend

people older than 70 has assets of more than 10 million yen, closely followed by the 60 to 69 year olds with 9.2 million yen (see Figure 7). Furthermore, they generally have no debts and own their own property.

Figure 6

Seniors with high purchasing power: Average monthly consumption per household in yen according to the household head's age group (2007)

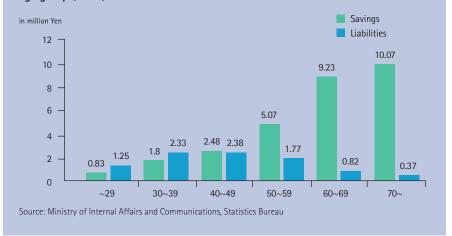


Considerable wealth, no debts

Figure 7

Financially well-positioned and secure:

Average savings and debts in yen per person according to the household head's age group (2007)



Depending on the specific viewpoint, the definition of the silver market or the "growing market of old age" varies significantly; it includes people older than 50 or 55 years of age (generation 50+ or 55+) up to the age of 90 to 100. That is, even age groups younger than the baby boomers and older generations, in particular, are included in this segment.

Old age as a growing market

By the year 2025, roughly half of the Japanese population will be older than 50 and by 2050 the number of people over 65 will rise from 18.5 percent in 2002 to 35.6 percent. Many of the elderly in Japan are financially well-off and have been labeled $r\bar{o}jin$ *kizoku* ("old nobles"). However, this does not apply to all of the elderly in Japan, and the number of poorer seniors is expected to rise in the future. However, at the moment the silver market is still a growing market in terms of demand and supply. Since the mid 80s, private expenditure of the over 60s has increased considerably more than that of 35 to 39 year olds.

On the supply side, new industries and business opportunities are developing as a response to the aging population and their emerging needs. Numerous Japanese companies have already successfully started to adjust existing products and develop new products and technologies for this target group. As shown by user-friendly cell phones, robots that take care of the elderly and premium offerings for enjoying life after retirement, more and more Japanese companies are adapting to the growing market with innovative products designed for the aging population.

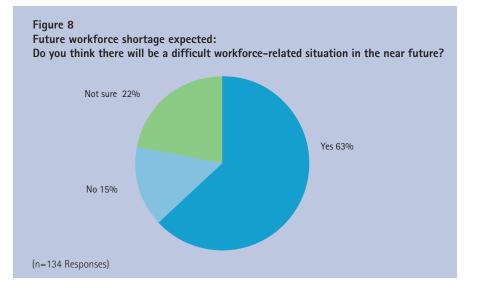
Study findings

Effects of demographic change on human resource and knowledge management

Aging workforce

The workforce of German companies in Japan has an average age of 41, which is more than two years older than the average workforce of Japanese companies. Japanese employees have an average age of 38.4 according to a corporate survey conducted in early 2009 (www.nenshu.jp). It can be concluded that the age of employees in German companies will further rise as it is generally difficult for foreign companies in Japan to find young, qualified personnel.

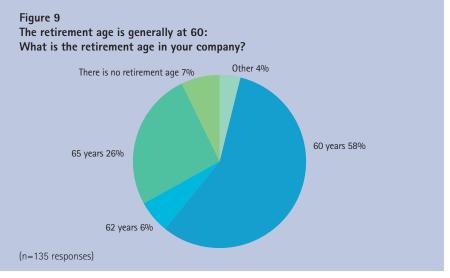
In the near future, the fight for talented individuals may become more intense. It is important to note that almost two thirds of all German companies expect workforce-related difficulties in Japan (Figure 8).



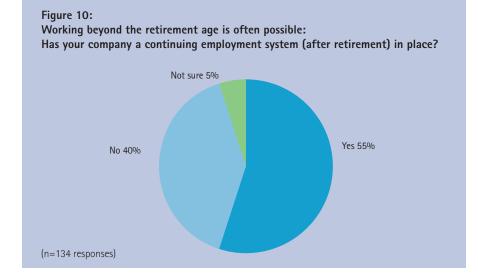
Replacing the baby boomer generation

German companies doing business in Japan have already started to replace the baby boomer generation, which began retiring in 2007. 53.5 percent of the surveyed companies said that they were – at least partially – affected by the 2007 problem. Because the "pension wave" will continue for several years, the corporate world will be confronted with this problem for some years to come. The subsequent loss of know-how due to the loss of highly competent employees and the acute shortage of employees are problems almost all German companies will encounter in Japan. Similar to their local competitors, these German companies are using common strategies such as increasing the retirement age and keeping workers employed who have reached the official retirement age.

The retirement age is 60 in 57.8 percent of all cases, and one quarter of all companies have already increased the age to 65 (Figure 9).



More than half of all German companies said that they will keep full-time employees on their payroll even after they exceeded the retirement age (Figure 10).

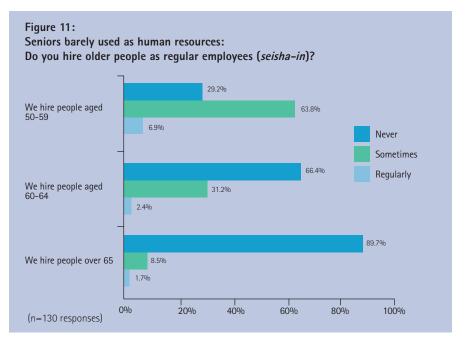


Most companies changed the rules regarding continuing employment for older employees who have reached retirement age. The legislator supports continuing employment for everyone; however, the hiring managers differentiate between good and poor performers and the need to provide low performers with compensation packages.

An employee who decides to continue working is often re-hired under considerably worse conditions. As Japan's labor law lacks contract rules for senior employees, these contracts are sometimes customized to individual needs but mostly to corporate needs.

Further employment beyond the retirement age

Study findings



Older people as a rarely used labor pool

In addition to the option of keeping or re-hiring employees after they reach retirement age, the recruitment of external candidates at the age of 60+ is rarely undertaken (Figure 11). Two out of three companies said that they sometimes employ applicants between the age of 50 and 60. In the case of candidates over the age of 60, the number of companies that will consider hiring, usually under exceptional circumstances, from this age group drops to one-third. Hiring rarely occurs at the age of 65.

A few reasons for the dismissive attitude towards seniors as potential candidates was explained by German companies in interviews as follows: many surveyed companies believe that employees who have spent their entire career in one company are not able to adapt easily to a new corporate culture. In addition, technical know-how and corporate-specific knowledge is missing. The companies asked were also critical about the drive of older employees and preferred to keep their team as young as possible. There were also doubts about their ability to use new media and how to update their technical knowledge.

Industry expertise in high demand Only in exceptional cases, employees older than 60 or 65 are actively recruited; for example, when a well-connected expert in a particular sector, who has important corporate contacts, needs to be employed. A few companies look specifically for older, more experienced candidates when they want to support younger managers. Also, regarding business negotiations involving older or highly respected people (such as doctors), older employees are regarded as more suitable to talk to the customers on an "equal" level. In general, middle-aged candidates with career experience (mid-career) are preferred. It is known to many companies that this selection will probably be a temporary indulgence and that older, long-term employees will play a more prominent role.

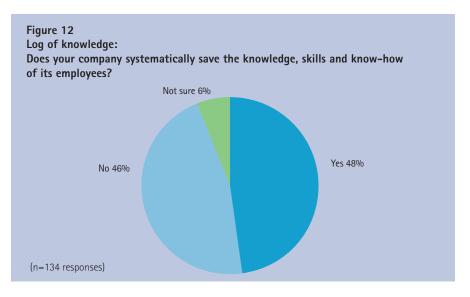
Case Study 1: Koreisha – HR consulting firm for people above 60

The labor market for people older than 60 is growing in Japan as shown by the HR consulting firm Köreisha. The work placement agency, led by 70-year-old Kenji Ueda, specializes in employees who are considered by many companies as "too old". Since the agency was founded in 2000, the pool of older temporary workers that have been placed by the employment agency has increased from 80 to 300 candidates. Almost all registered people are males and older than 60, and who have already retired. They are usually temporary contractual work as trainers, customer engineers, security staff or call operators.

The challenge of lost knowledge

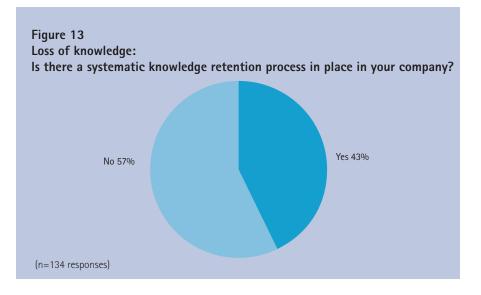
The risk of losing know-how is another challenge related to demographic change, in addition to the aging workforce. Among future retirement candidates are important experts with intrinsic knowledge, especially in the areas of production and engineering. Thus, there is a fear that knowledge and expertise will get lost. However most of the surveyed companies are aware of the possible risks of losing knowledge. 94 of the 135 companies surveyed consider the risk of losing knowledge as an important issue and 12 view it as extremely important.

Despite the awareness about possible risks, the process of systematic data collection is implemented only by a small majority of the companies. 49.5% of the surveyed companies said that they would systematically save their knowledge, skills and competencies, while almost the same portion (45.5 percent) do not use any systematic process to secure knowledge (see Figures 12 and 13).

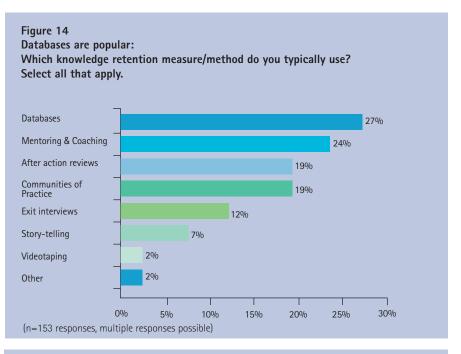


Managing knowledge actively

Study findings



Principally, the externalization and passing on of knowledge and the systematic documentation of knowledge and its preservation is a process that requires much effort, including a wide range of instruments and methods, which can be adapted specifically to the situation and the company's needs and combined accordingly. The range of options is also reflected in the companies' responses. The emphasis was spread almost evenly over different databases, follow-up project reviews, group discussions, mentoring and coaching (multiple answers were possible). 11.9 percent of the companies also included interviews about layoffs or retirement and 7.4 percent included story-telling (Figure 14).



Case study 2: Toyota – Knowledge management at training centers

In 2003, Toyota opened a Global Production Center (GPC) in Japan and since then has opened similar centers in the USA, England and Thailand. Experts and multimedia applications provide training and transfer of technical knowledge for Toyota employees worldwide and have, in general, the ability to secure and systematically pass on the company's organizational expertise and know-how. Here, retirement candidates are employed as experts and trainers.

Preserving knowledge systematically

Instruments and measures for preserving knowledge

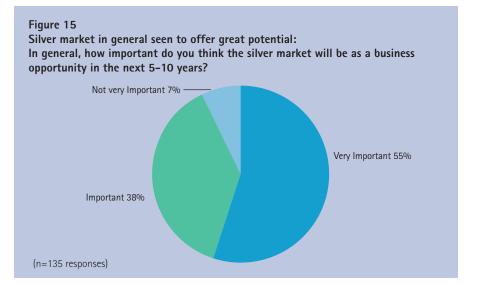
Videotaping	Is a method to provide long-term access to knowledge to different people in the company. Processes and procedures or even interviews are recorded and can therefore be stored and distributed. Particularly in the case of in- terviews, knowledge can be better structured.
Story-telling	Is a method of sharing verbal information; in this case implicit know- ledge is passed on as a metaphor. The listeners actively take part in the story, which improves their understanding. In this way, the content of the story is not only "heard" but also "experienced". An example is the "learning history approach". In using this method, subjectively expe- rienced knowledge (episodes) that employees memorize about certain events in the company are recorded during interviews; in turn, they are evaluated and eventually revised according to a common story, which will be provided to the employees.
Mentoring/ Coaching	Describes the occupation of an experienced person (mentor), who pas- ses on knowledge gained in the context of specialization or by experi- ence to a less experienced person (mentee). The goal is to support the mentee in his/her personal or professional development. In contrast to coaching, the mentor is usually not specifically trained to work in this position but has an advantage with respect to experience or knowledge, which can be then shared with the mentee.
Communities of Practice (CoP)	Describes a community of people that are informally or formally con- nected, have similar tasks and exchange knowledge at regular meetings. CoPs usually have a basic structure that outlines the goals, tasks and communication channels. Members continuously evaluate and adjust these goals, tasks and communication channels to the needs of eve- ryone. CoPs are mostly temporary communities that are dissolved or restructured after the goal has been reached.
After Action Review	This is the systematic exchange of experiences after completion of a pro- ject. At first, the originally planned target situation, that is, the projects' goals, is identified and the events are then systematically processed. The group members describe their actions, expectations and key situations and the problems that arose. The next step, a "should-be" comparison, will then be performed. The causes for the success or failure of the im- plementation/project will be evaluated. Mistakes and successful aspects are addressed. Based on the analysis, the group then summarizes their experiences in context of "lessons learned", from which the group itself can profit as well as other groups performing in similar situations.

Study findings

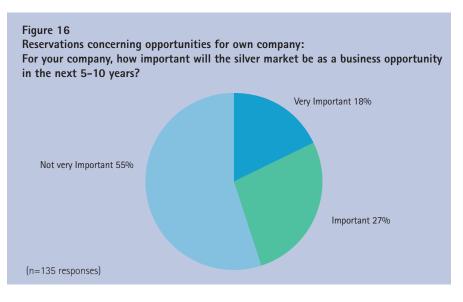
Product development and marketing in times of demographic change

For many the silver market is new territory

Demographic change implies a shift in market segments. As a result, the diminishing segment of younger customers is contrasted with a continuously growing segment of senior customers. The vast majority of German companies are convinced about the business opportunities in the silver market. More than 90 percent of all companies asked believe that the senior segment will develop into an interesting market in the next five to ten years (Figure 15).

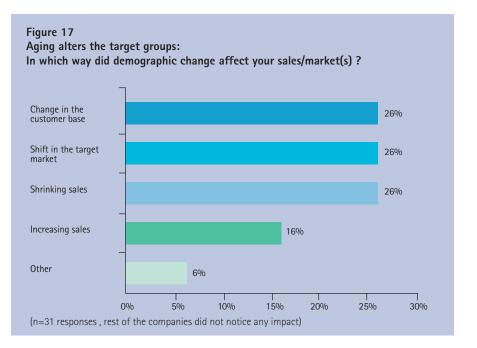


Only 45 percent of companies see potential business opportunities for their own company and believe that aging will dramatically influence their business model in the coming years (Figure 16). Most of the other B2B subcontractors feel that they will hardly be affected by demographic change (see page 25).



Silver market as a business opportunity

Although there is potential, the marketing and the development of new customer groups in the silver market is still new territory for many German companies in Japan. One in four companies noticed that demographic change directly affects their businesses. A quarter of the companies that noticed these effects reported a decline in sales or changes of the customer base and the target market (Figure 17).



16 percent of the relevant companies reported they were able to profit from demographic change by means of increased sales. Several examples illustrate how companies took advantage of demographic change and as a result of these changes they were able to improve their business opportunities.

According to the survey, one out of five German companies in Japan offers products and services for older consumers. These are not only items related to medical devices and healthcare but also include food supplements, clothing, transport and walking aids, household appliances and services such as financial and insurance products (Figure 18).

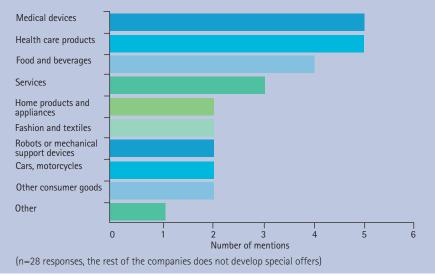
One out of five companies has silver market products

Study findings

Figure 18

Hardly any consumer products for the elderly:

Do you develop specific products or services for the senior customers?



Subsegments or examples of successful silver market items mostly include products that can be handled and used easily, as well as products for elderly care and for a comfortable, self-sustaining life.

Among the companies profiting from demographic change there are not only many firms from the healthcare sector (see case study 3), but also companies in the financial and insurance sectors. In the case of Allianz, for instance, demographic change in Japan was a reason for the company to offer, for the first time, life insurance products, which started in April 2008. Also, ThyssenKrupp Access, a ThyssenKrupp subsidiary, realized that the aging society in Japan is an opportunity to gain entry to the Japanese market with the stair lift product "Flow" (case study 4).

Case study 3:

Carl Zeiss Meditec, Otto Bock and Siemens – Healthcare as a growing market

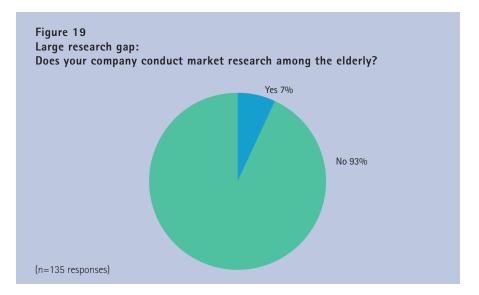
Demographic change means for many companies losses in their standard customer segments, for others it is a welcome phenomenon. The companies invested in the healthcare sector can look forward to a growing customer base. It means for Carl Zeiss Meditec, first and foremost, that the growing number of patients and also the demand for medical devices, especially in the area of ophthalmology, will increase. Otto Bock also has an optimistic outlook for the future, particularly in the area of orthotics, where customers tend to be older. Similarly, with the increasing number of seniors in need of assistance, the customer base is also growing for "Mobility Solutions". The healthcare sector is also a growing market for Siemens, and because of higher life expectancy, the request for hearing aids will increase. Since the elderly are already able to cope with the latest electronic devices such as cell phones, Siemens offers hearing aids with wireless remote control. Compared to the conventional method that uses small buttons and which therefore requires a steady hand and good eyes, it is considerably easier to adjust the settings of the hearing aid to individual needs and to environmental conditions. The penetration rate for hearing aids in Japan is very low compared to other industrialized nations since hearing aids are still highly stigmatized. This is reflected in the high average age of first-time hearing aid wearers. Thus, Siemens sees great potential in the Japanese market for their small, discreet and fashionable hearing aids.

Demographic change as the reason to enter the market

Case Study 4: ThyssenKrupp Access - Creating mobility

In addition to luxury items and increases in travel for wealthy baby boomers, there is an emerging demand in the silver market for every-day products. Accordingly, ThyssenKrupp Access interprets this primarily as mobility for seniors in their private and social life. There is great potential for barrier-free solutions that facilitate an easier life in senior-unfriendly residences in Japan's metropolitan areas. Thus, demographic change was only the starting point for ThyssenKrupp Access to enter the Japanese market. An example from the private life area is the stair lift "Flow", which runs on a single steel rail on the stairs, which allows easier installation. This compact product provides sufficient space for other people to use the stairs at the same time, an important competitive advantage especially in small Japanese condominiums.

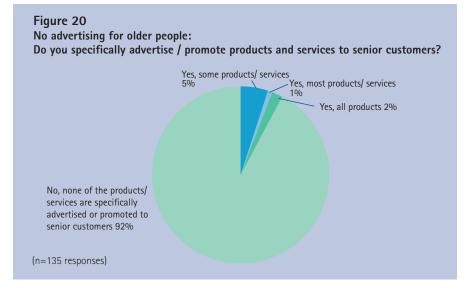
Most of the companies asked, however, are very cautious about conducting business in the silver market. This is true across different sectors and applies to market research and marketing efforts as well as product development for seniors. Only ten out of 135 participating companies said that they carry out market research among the elderly (Figure 19). Thereby, surveys and focus groups among seniors are not obstacles. Only 10 percent of the companies thought that surveys among the elderly were more difficult than with other age groups.



Marketing activities specially directed at older consumers are still rarely carried out. A vast majority of the surveyed companies (92.2%) said they did not market any products for older target groups (Figure 20). Only 5.4% of the companies conduct marketing directed towards seniors for a limited portion of their products. These companies are pioneers trying to appeal more strongly to seniors by either adjusting or expanding their product range and also by strategically reorienting their communication.

Silver marketing activities still weak

Study findings

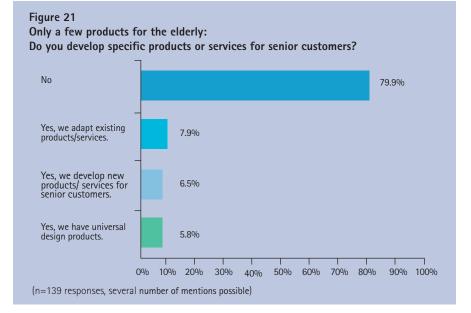


Case study 5:

Otto Japan – quality and service or what older Japanese women want A company familiar with older female customers is Otto Japan. Since the 80s, the fashion catalogue company followed the main customer group between the ages of 35 and 55, which has since become older. Thus, Otto introduced the new catalogue "Otto Madame" in addition to their main catalogue "Otto Women". "Otto Madame" specifically targets women between the ages of 50 and 65. In this catalogue, the company tests true silver market products for women older than 65. Otto Japan addresses the changing demands and considers the fashion styles of older women. The product line for mature Japanese women is of particular high quality and unique in terms of elegant materials, cuts and colors. In addition, the customers can expect excellent service. Otto Japan is able to fulfill these expectations with a VIP hotline. Here, the customers are advised in an especially polite style and are informed in detail about their orders as well as of possible selections for specific occasions.

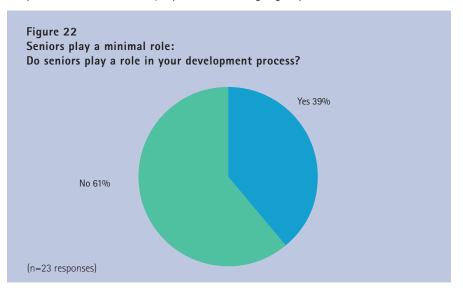
The number of companies developing products for seniors is very limited (Figure 21). 82.2 percent of German companies in Japan do not develop products or services specifically for the elderly. Only 6.7 percent said that they developed products designed to meet the needs of older customers. Other companies offer products with a "universal design" or they are modifying existing products. However, the fact that only a few development activities take place corresponds to the fact that research and development is in many cases tied to the parent companies.

Older consumers with high expectations



Product development for the silver market is still insufficient

Out of the few German companies that develop products for seniors only 39 percent include seniors in the development process (Figure 22). The majority, 61 percent of the companies, works without any input of future target groups.



Case study 6: Nissan and Yamaha - seniors on the road

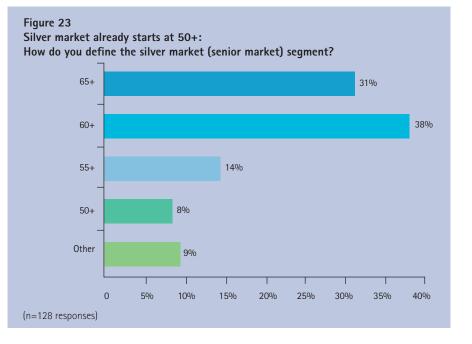
One option to develop suitable innovations for seniors is to include the elderly in the development process. Another option is that the developers themselves act as "seniors". Nissan's designers slip into a "senior suit" consisting of a jacket (weighing one kilogram), uneven shoes and bandages, which prevent their knees from being able to bend. A number of modifications means that Nissan's models are more senior-friendly. The range includes door handles, which look like metal rings and can be opened with the right or left hand, easily readable fittings and extra fixtures to hold on to. The motorcycle manufacturer Yamaha also intends to adjust to the needs of older customers. According to a study by Yamaha Motor Co. and the neuroscientist Professor Kawashima from Tohoku University, motorcycling has a positive effect on brain activity: improvement of memory functions and reduction of daily stress. According to these results, Yamaha wants to attract more older customers, always with the promise of looking younger on a motorbike.

Case study 7: **Fujitsu's "Raku-Raku Phone" and Laptop – Not only for seniors** The "Raku-Raku Phone" (*raku* = easy) is a huge success in Japan, with more than 15 million units having been sold up to now. The cell phone series developed by Fujitsu and NTT DoCoMo not only wins seniors with its easy-to-read font on its display, larger sized keyboard, less complex functions and simple and intuitive operation but also through its noise-detection system, which automatically adjusts the volume of the other caller's voice according to the surrounding noise level and suppresses background noise to ensure the user's voice is transmitted clearly. There are now different models, ranging from the Raku-Raku Phone Simple to the Raku-Raku Phone Premium with digital television and many other high-end functions. In 2008, the new Raku-Raku notebook, which is only available in the Japanese market, was released and uses the successful standard concept. Fujitsu also wants to win older customers with a larger keyboard and telephone support regarding all questions about the use of a PC, especially for those customers who have never used a notebook PC before.

Case study 8: Elderly care robot Paro - making seniors happy

Most robots aim to increase the efficiency of production processes in industry. In designing the so-called "Mental Commitment Robots", a completely different strategy is applied by the manufacturers. These robots are supposed to stimulate emotional belonging in the context of human interaction and offer, in contrast to their efficiencyincreasing colleagues in industry, a truly psychological enrichment experience. An example is the robot "Paro" developed by Dr. Takanori Shibata at the National Institute of Advanced Industrial Science and Technology. The robot, which comes in the form of a baby seal, offers older patients in hospitals and nursing homes the chance of owning a pet without the risk of infection, while pet bans can be ignored. The use of robots in nursing is not taken seriously enough in Western cultures, despite the fact that, especially for patients with dementia, recent studies show positive, concrete effects, which range from psychological improvements, by means of relaxation, to an improvement of the physical condition and the ability to interact socially.

It is interesting how companies define the silver market (Figure 23). The majority of companies (70 percent) assume that the silver market includes potential customers between the ages of 60 and 65. One out of five companies surveyed, however, includes also customers in the 50 to 55 age group.



Silver market is defined very differently

Case study 9: Nintendo Wii and DS - "Touch Generations"

The products offered for different generations such as the Nintendo game consoles "Wii" or "DS" appeal to teenagers as well as to dynamic seniors, regardless of age and physical or mental condition. While the whole family plays tennis with the Wii console, seniors can keep themselves mentally fit by using DS brain jogging or they can improve, for example, their English language skills. Without losing their younger core clientele, the strategy of offering products for the elderly has been a success for Nintendo. This example indicates how obvious age-related activities (computer games) can connect generations and significantly expand the sales potential.

Silver B2B – Customers also have customers

Manufacturing companies have argued in surveys and during follow-up interviews that B2B companies, which do not manufacture products for final customers, do not need to deal with the silver market. However, one should keep in mind that machines and other equipment, as well as the workplace and the working environment must be adjusted to suit the needs of senior employees. As a starting point, it is useful to provide ergonomically designed, easier and intuitively usable items or easily legible characters and signs on machines. Such products designed specifically for the physical as well as the mental needs of older employees are quite innovative so that younger staff can use them as well.

ndustry goods Thus, there is also a silver market for B2B-manufacturers. Manufacturing companies often use multilevel sales systems, that is, as component and system manufacturers they deliver their products to other customers or manufacturers and the final consumer is at the end of the chain. To generate knowledge about demand and experiences regarding the final and middle customers as early as possible is an important requirement for a typical supplier. It is important for companies to apply this knowledge innovatively to the development and construction of their own (system) components. Also, the growing number of senior drivers is a very important topic for the automotive industry. Car manufacturers (OEM) and suppliers (first and second tier) are striving to secure better entry, exit and driving comfort in cars. Again, different safety features and driver support systems emerge, which are aimed at directly supporting senior drivers. Product development, ideas, know-how and collaboration between car manufacturers, suppliers and final customers (drivers), which are all involved in "car clinics", play a significant role in the innovation process.

Silver market for industry goods

In the areas of human resource management, knowledge management and market and product innovation, demographic change affects business management strategies to a different extent. A few Japanese companies have already responded to the new challenges with a series of successful solution strategies.

Human resource management

Recent surveys show that a large majority of Japanese companies uses a continuing employment system: after reaching retirement age, employees are either directly reemployed or their employment is extended without discontinuation. Generally, the scenario is for a one-year contract that is renewed every year. According to the data analysis conducted in June 2008 by the Ministry of Health, Labor and Welfare, 96.2 percent of all companies with more than 52 employees introduced one of these three measures, 99.8 percent of all companies (more than 300 employees) and 95.6 percent of small- and middle-sized businesses. By March 2009, large companies were required to implement one of the three measures. Smaller companies need to comply with this rule by the end of March 2011. 39 percent of the companies allow employees to continue working beyond 65; in the case of employees 70 and older, the portion is 12.4 percent. Interestingly, the portion for smaller and medium-sized businesses is almost twice as high as for large corporations. The demand for continuing employment seems to be considerably higher in smaller and medium-sized companies.

An increasing average workforce age sooner or later poses new challenges to companies. Different physical abilities slow with age and may influence employees' productivity. In many cases this can be compensated for by experience and routine, but, essentially, senior employees pose different demands on their employers than do (young) university students. It is important that machines and other devices be modified with respect to a "delayed" response time, while the physical fitness of senior employees is also critical. Operations should become more intuitive, machine control buttons must be larger and work instructions need to be more legible. Also, automation is unavoidable in the future to increase efficiency and to facilitate work for senior employees, while adjustments to the workplace and the working environment are required. Carrying aids and new developments in robotics have great potential to meet employees' needs regarding the silver generation in the best way possible.

Systematic health management for employees and suitable adaptation of the workplace and job duties will play an increasingly important role. Furthermore, age discrimination is a topic that is becoming more and more relevant. Unequal treatment based purely on age is unacceptable and usually related to common errors or misunderstandings like the myth of age-related declining output, which has not been proven (with the exception of exclusively physical work). The problem of age discrimination is relevant for current employees as well as for new job candidates. In the USA, application material should not include birth date and gender, whereas in Germany and Japan a photo has to be sent in (which is not allowed in the USA). The accumulated needs are obvious. The rapid aging of the population and the workforce reinforces this aspect.

> Certain problems can be anticipated with respect to continued employment or recruitment of senior employees. In the case of re-employment or continued employment on a contract basis after retirement or after reaching the company's retirement age, the employees must accept salary cuts of up to 50 percent. Younger employees, previously low in the hierarchy, now work in higher positions and/or are even direct superiors. Thus, many employees, who continue to work or are rehired, prefer to be transferred to another department, subsidiary or sister company. But even if they can avoid former co-workers/supervisees, they are still ranked lower in the hierarchy than younger employees. This is difficult in Japan because of the strongly anchored seniority system. The younger generation feels restricted in push-

Age discrimination unacceptable

ing for innovations and changes, because of the senior employees who continue to work or who are rehired. However, teams consisting of mixed ages have a potential that is highly creative and innovative, and which can be unlocked with appropriate leadership and personal management.

Knowledge management

The measures taken by Japanese companies to prevent the risk of knowledge drain include four common practices:

- 1. Raising the retirement age set by the company
- 2. Re-employment after retirement
- 3. Setting up or expanding corporate universities or technical training centers
- 4. Externalizing implicit knowledge and systematic documentation and storage of knowledge

The first two measures – raising the company retirement age and re-employment after retirement – are very popular and important measures due to the immediacy and urgency of the problem, but they cannot be seen as effective solutions in the medium and long term as they only delay the problem without offering a permanent solution. They help companies in using employees' expertise, knowledge and experience over an extended period. The companies have more time and capabilities to train successors and to transfer and save critical knowledge. It is in light of the higher life expectancy and the more productive life-cycle that are certainly meaningful to re-evaluate current retirement and employment rules and practices. Interestingly, a few companies like McDonalds Japan or Mayekawa Manufacturing even decided to abolish completely the company's retirement age, so that employees wishing to continue can do so as long as they want. This is possible thanks to the revised "law for stabilizing the employment of senior citizens" that became effective in 2006 (see Figure 5).

Retain knowledge from veteran employees Toyota introduced a re-employment system after it became obvious that in engineering alone approximately 3,000 employees would retire between 2006 and 2008 in Japan. The aim was to select particular experienced employees – often called "veterans" in Japan – for re-employment after their official retirement, in most cases without a time gap. In fiscal 2006, for example, Toyota re-employed almost 56 percent of all employees, who reached their retirement age. The selection and decision making process considers a systematic and regular performance evaluation and the outcome of meetings with the relevant employees throughout the year. Also, other companies decided to use comparable measures.

The third measure – setting up or expanding corporate universities, technical training centers, etc. – also use of the second approach, because selected seniors are often used as mentors/coaches or lecturers at company-internal training centers and corporate universities. This scenario often applies to industrial manufacturers (e.g., Panasonic, – previously known as Matsushita Electric Industrial – and Mitsubishi Heavy Industries). Toyota has created several Global Production Centers (GPCs) for global training and knowledge transfer purposes (see case study 2).

Systematic knowledge documentation and storage

The fourth measure – externalizing implicit knowledge and systematic knowledge documentation and storage – includes a variety of tools and methods that need to be individually combined and modified to the situation and needs of the respective company. Thus, it is difficult to provide general recommendations and many companies get support from outside consultation in selecting, compiling and adjusting their list of measures. Nissan, for example, asked a notable consulting company to provide systematic knowledge retention of veteran and technical expert knowledge. These consultants conducted detailed interviews and surveys with experienced engineers, and collected and processed all relevant information, which was saved in folders, PCs and different files to document any critical expert knowledge in a systematic and accessible form, thus providing access to successors and other employees. A popular and effective measure is the introduction of a knowledge transfer system that uses team work, pairing up seniors with novices (e.g., as practiced by the Japanese steel corporation Nippon Steel).

Product Innovation/Marketing

Japan is often regarded as the forerunner in the area of the silver market, which is partly related to the demographic development of the country but also to consumer behavior and the innovative capacity of Japanese companies. Japanese customers are generally considered as demanding and this seems to be especially true for "mature" customers. High quality and good service are therefore a must. In addition, there is also a greater openness for technical novelties when cross-compared against other countries. Generally, senior customers are also ready to pay a premium price. The silver market - due to the wide age range - is by no means a homogenous market segment. Accessing the market appropriately therefore requires not only the consideration of cohort-specific behavior but also of age-specific preferences. To exclusively define the target group according to age is insufficient as the biological age of people is not very informative about their performance- and activityrelated condition or about their individual pre-dispositions, needs and preferences. Generally, most seniors feel ten years younger than they actually are or identify themselves strongly with persons of this age group. This phenomenon of "cognitive age" is especially important when trying to appeal to the target group of the silver market.

A cut represents leaving working life and the start of retirement, so that the silver market can be split regardless of age into the groups of "pre-retirement" and "post-retirement". The wants and needs of the seniors are comparably diverse and also the areas and industry sectors that feed the silver market can profit from this development. The following segments in the Japanese senior market are often seen as being very promising: medical and gerontological devices, elderly care, rehabilitation, preventive medicine, cosmetics, nutrition products, automobiles, hobby equipment, household appliances, home accessories, clothing, financial and insurance products, continued education and travel. A further important area includes luxury items and retro-products.

The silver market can be roughly divided into the following three subsegments:

- 1. Easy-to-operate and easy-to-use products: A classical product example of the Japanese market is the "Raku-Raku phone" (see case study 7).
- 2. Luxury goods for wealthy seniors. As shown above, these demands are not exclusively or necessarily age-related. Senior customers need the same or similar products and services as other age groups. Because of their financial position as well as the increased time they have to shop after retirement, it is possible to specifically attract this customer group. Successful examples are (group) travel and yachts as well as retro-products such as electric guitars and certain types of motorcycles. In general, Japanese companies assume that senior consumers will eventually have higher expectations with respect to product design, quality and services and accordingly they offer products and services.

Silver market segments

or limited mobility: because of the increasing number of seniors and the growing needs for the elderly, gerontotechnological devices are important silver market products, and at the same time they can be used by younger patients. Special growth areas refer to household robots and the healthcare and nursing sector. The automobile industry has also adjusted to the constantly growing number of senior drivers with "silver cars". Age-independency as a success factor Regarding the silver market and its age-specific segmentation, it is important to note that successful new products oriented to the needs of seniors are not exclusively restricted to the use of the elderly. In this respect, practical, helpful and easy-to-use products offer additional value for all consumers, regardless of age. For this reason, new products that are not related to age - that is, universal - can be used effectively and successfully by young and not quite as young customers. In this context, key words like "ageless marketing" (or "age neutral marketing"), "trans-generational design" as well as "universal design" play a key role. Universally designed products should be able to be used by everyone regardless of age, including people with agerelated restrictions but without emphasizing this aspect to avoid offending young or not quite as young customers. An interesting example for a trans-generational product is Nintendo's hugely successful game console the "Wii" (see case example 9), which deliberately seeks to bring several generations together with a common game and therefore makes it appealing to the whole family, even grandparents. In addition, games are available that are designed to keep seniors – as well as younger people – physically and mentally fit. Senior employees as key figures The three topic areas of human resource management, knowledge management and

product innovation/marketing can not be seen separately in the reality of business. In this respect, senior employees are often able to know and understand the wants and needs of their age-equivalents better than younger people and can become key figures in product development, marketing and sales. On the other hand, older customers also prefer to be served by people of their own age, especially when personal consultation is required, as is the case for hygiene or cosmetic products or technical appliances whose functions need to be explained. Also, long-standing career experience, expertise, leadership potential and a large network supports senior employees and encourages them to get involved in innovative or strategy projects to help train younger employees and take on responsibilities.

3. "Gerontechnology", support and care devices for seniors with disabilities

Overview of recommended measures

Beware of traps: The most common mistakes when dealing with demographic challenges and how to avoid them		
Mistake	Reason and tips for managers	
Senior = unproductive	Declining work performance in older age is a myth with no scientific proof (exception: purely physical work). Senior employees are not fossils but a valuable source including experience expertise and leadership potential.	
Leaving the potential of diversity unused	"Diversity" includes an efficiency and creative potential and both aspects are regarded today as important competitive advantages. "Age diversity" is no exception to this. Make use of mixed aged teams and their innovative potential for product development, mar- keting and sales.	
Lack of strategy to prevent loss of knowledge	A classic case: the expert leaves and with him goes his knowledge. The "leaving expert" problem always comes up when an important knowledge holder changes companies, takes time off or retires. A large number of experts close to retirement age worsen this problem. Basically, it car be said: knowledge management and storage begins with the first day of work. To successfully undertake this management and storage, knowledge and the knowledge holders in the company should be systematically mapped and critical knowledge should be regularly saved or passed on	
Underestimating older employees as a source of knowledge	It is true that there are many areas in which knowledge becomes out of date. This is especially true for technical details and certain facts. Generally, this isn't true for expertise, experience or process know-how acquired over a long period of time. Use this potential of senior emplo- yees in innovative or strategic projects or when training younger employees. Nobody knows your company and its culture as well as your seniors.	
Segmenting exclusively according to age	Very tempting due to demographic development; but modern marketing left the simplistic segmentation based on age behind a long time ago. Individual lifestyle, financial, professiona and health situation, etc., significantly influence the needs and wants of consumers.	
Measuring all "seniors" by the same yardstick	50+, 55+, 65+ may sound handy and may generalize the silver market. But it may not make sense to work this way. With today's high life expectancy, 50+ can almost refer to half of the human life-cycle.	
Underestimating and/or patronizing seniors	Nowadays, it is more and more important to know exactly what consumers want and to cater to their individual needs. End-users are more and more tied into the development process providing ideas or even start an innovative process. Instead of asking seniors or incorporating them into development, many companies active in the silver market seem to believe that they know what customers want much better than they do. As is the case for segmentation: do not take a step backwards but be innovative and approach consumers.	
Fear of age and "seniors"	Many companies fear that their image among other age groups will be damaged if they appeal to the silver market. Parallel success among young and senior people is indeed a big challenge and not completely without risk. The key to success refers to "universal design" or "trans-generational design" as well as to "ageless" or "age-neutral" marketing. As usual exceptions confirm the rule and depending on the product, an age-emphasizing strategy can also lead to success (e.g., Dove pro-age). However, in general it is true: beware of ageism, think trans-generationally!	

Demographic change – crisis or opportunity?

Japan is, of course, not the only country that can expect an age wave or the "baby boomer tsunami". Generally, all developed nations as well as many developing countries are affected by the changing demographic structure. Those companies that are active in these markets should start to think about dealing with topics such as an aging working population, lost knowledge and lack of (skilled) labor, as well as producing suitable products, innovations and technical devices for older people. As Japan is one of the first countries to be directly confronted with the effects of the changing demographic structure, it can play a valuable pioneering role for other countries in adequately handling these problems, not only because demographic change has progressed significantly, but also for the reason that Japanese companies have adjusted better to an aging customer base. One should keep in mind, however, that even in a pioneering country such as Japan, the potential of the silver market has by no means been fully recognized or fully leveraged.

A look at the characters clarifies it: in every crisis (kiki, 危機) there is also an opportunity (kikai, 機会). Indeed, the so-called demographic crisis can also offer opportunities that do not seem so obvious at first. In light of the higher life expectancy and longer productive life-span, some of the current retirement and employment rules and practices seem to be outdated. The American demography and management expert Ken Dychtwald and his team postulated in 2004: "It's time to retire retirement". The raising of the retirement age as well as a more flexible re-arrangement of work relations in Japan seems to be an important step in the right direction. The crisis therefore helps to identify labor market structures and subdivide them to cater to the actual needs of employees as well as companies. The silver market offers two opportunities for foreign companies: a potential target group in the silver market high in purchasing power and willing to consume and highly motivated potential employees or consultants rich in experience with precise knowledge of the Japanese market and its companies. Also, part-time or consulting contracts with high-level baby boomers can be financially attractive because they will expect a reduction in income - even in the case of continued employment at the same company - upon reaching retirement age.

The silver market will be seen as a very lucrative market segment mostly due to the economically attractive baby boomer generation that will retire in the coming years, leaving them with much more time and money. The main focus, at the moment, is on the "old, rich and healthy", while the "old, poor and sick" are receiving significantly less attention. On the other hand, there are signs that the silver market of the future is going to look completely different and that the group of the "old, poor and sick" could form a clear majority: increasing social stratification (key word: *kakusa shakai*), more and more seniors 75 and older (ten percent of the Japanese population since November 2007) – an age after which physical decay accelerates considerably – a high number of non-regular employees (more than one third of all employees in Japan) with insufficient social security. This could become a demographic time bomb and raises the issue of corporate social responsibility to provide products and services that support seniors in their everyday lives and enables them to grow old in a humane way.

Tomorrow's silver market

Conclusion and outlook

Quality certificates and standards for 50+

The German government introduced outlines for the initiative "Age as an Economic Factor" in April 2008. Based on existing quality labels, it discussed whether a quality certificate for generation-friendly products could be of help to seniors and an incentive to companies to offer more user-friendly products and services and to consider in their product development the needs and demands of seniors. By establishing an approval certificate, the reputation of German products may improve domestically as well as abroad, according to the press release. A pioneering role is played by the "argus" certificate, for which the German Senior Citizens League (DSL) and TÜV Rheinland Berlin-Brandenburg (a global testing and assessment services company) developed optimal standards in the areas of customer services, product quality and user protection.

Products and services modified to subgenerations might be viewed as pure corporate philanthropy. However, by implementing a suitable business model, it is possible to run an excellent business and to profit from these social and ethical actions, not to mention the positive effect on reputation and advertising. The business guru C.K. Prahalad illustrated this aspect for markets in developing countries in his book "The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits". This model can be applied to the future silver market. Similar to markets in developing countries, scale effects can be simply achieved due to the mass of consumers. These scale effects make sure that profits can also be made with income and asset-weak consumers. It is important to note, however, that the user profits the most from improving living standards. If you use the population pyramid instead of the income and assets pyramid, it becomes evident that this is a case of "fortune at the top of the pyramid".

Use the "Window of Opportunity" The current growing market "age", as we know it, is a "window of opportunity" that will soon close. It is therefore important to prepare today for the silver market of to-morrow and to use the demographic crisis as an opportunity.

Appendix

Profiles of the surveyed companies

The online survey is based on 135 valid responses from German companies doing business in Japan. The sectors of mechanical engineering and technology (21.2 percent) as well as automotive and motor vehicle technology (15.1 percent) were well represented. 8.3 percent of the companies were consumer suppliers and 7.4 percent were from the financial and insurance sector.

On average, the companies have been in Japan for about 27 years, the longest for more than 100 years. The employee distribution in Japan is 10 to 100 employees in more than half of the companies.

The annual turnover in the Japanese market is, for about half of the companies, under 10 million euros; one-third of the companies have a turnover of 100 million euros. The rest (around 19 percent) have a turnover of more than 100 million euros, of which, 5.5 percent have a turnover of more than one billion euros.

In 121 of 135 cases, the questionnaire was filled out by a member of the executive management or the board of directors, and only in 14 cases did other employees respond by using the online questionnaire.

List of the interviewed companies (in addition to the survey)

- Allianz Life Insurance Japan Ltd.
- Bayer Holding Ltd.
- Bosch Corporation
- Bosch Rexroth Corporation
- Carl Zeiss Meditec Co., Ltd.
- DHL Japan Inc.
- Karmann Japan Co., Ltd.
- NEC SCHOTT Components Corporation
- NRW Japan K.K.
- Otto Bock Japan K.K.
- Otto Japan Inc.
- Siemens K.K.
- Siemens Asahi Medical Technologies Ltd.
- T-Systems Japan K.K.
- ThyssenKrupp AG Representative Office Japan
- ThyssenKrupp Access Japan Co., Ltd.
- TÜV Rheinland Japan Ltd.
- TÜV SÜD Japan Ltd.
- VOLKSWAGEN Group Japan KK
- Winckler & Co., Ltd.
- ZF Japan Co., Ltd.

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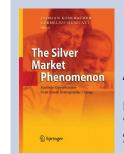
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