

Ageing - a new potential for European construction sector

Heidi Siekkinen

Abstract

The growing importance of aged consumers has been noticed in many lines of business. Sectors affected by the growing share of active seniors will also be including construction business and real estate business. These sectors are crucial actors when the housing related demands of the aged are faced.

The housing related special needs of the ageing population are divided into two groups. These are structural needs and service needs. Structural needs are closely connected to the buildings and their technical features. Buildings are important to the service needs also as the service providing could be made possible or easier with technical alterations as many services are produced at homes or they are delivered to the client's home.

New construction can't build enough new dwellings that fulfil both structural and service needs. At the same time the existing housing stock is not designed for the ageing population. Thus it is a great potential for the renovation sector to make the necessary alterations. To estimate this potential, the existing housing stock has been introduced in this report. The main focus has been on the multi dwelling apartments.

Some typical and easily fixed structural problems in apartment buildings are: rigid locks, doors that open to the wrong direction and the location of the light switches. If these and other constraints could be taken under consideration in renovations the problems of accessibility would be lessened. However, this would not solve the problem entirely, as the surroundings of the houses should be accessible too.

Service needs can be divided into three. There are the services produced in customers' homes, services linked too customers' residential surroundings (for example home deliveries) and services not linked to the residential surrounding of the customer. For the first to service groups it is also important that the building and the apartments are designed so that the delivery and production of goods and services is easy.

If the existing housing stock could be renovated to make it possible for the ageing population to live independently at their homes longer it would be beneficial to many actors. In addition to the aged population this could also benefit the construction and real estate sectors (business potential), service providers (business potential and efficient processes) and society (lower institutionalisation costs).

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Preface

This study is a part of EU-funded Homedoor research project (E-Commerce Logistics for Homes, GIRD-CT-2001-00493). Homedoor project researches and conceptualises the e-commerce related logistics for European residential buildings. The main targets of the project are to improve living quality, to enable and facilitate home services for ageing population and to revitalise urban residential structures.

This study is focusing on the fact that populations of EU15 countries are getting older. Thus housing related needs of this ageing population are changing too. This is a great challenge and an opportunity for the construction sector as it is important to build new residential houses and to renovate the existing buildings so that the buildings are capable of fulfilling these needs.

This study consists of three parts. First part gives an overall picture of the existing housing stock in EU15 countries. Second part describes the ageing 'segment' as a potential market for the construction sector. Last part handles with the other relevant factors including financing issues.

The study was made in VTT Building and Transport by research scientists Heidi Siekkinen. A great contribution came also from Heli Koukkari and Tuula Grönfors. The draft was commented by dr. Leena Sarvaranta, group manager Antti Lakka.

11.11.2002 Tampere

Antti Lakka

Group manager

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1. Introduction

1.1 Background

Europe is ageing fast. In 2000 about 15% of the European population was aged over 65. In 2020 this share will be almost 20%. The ageing process is not the same as it was with previous generations. As Dytchtwald puts it in her article in the Journal of Consumer Marketing:

Most of us will live longer than we expect, possibly much longer, as biotechnology and medicine bring the ageing process under control. Furthermore, it is likely that we will age more slowly than previous generations, with greater health, energy and vitality. /1/

Leventhall continues in the same journal:

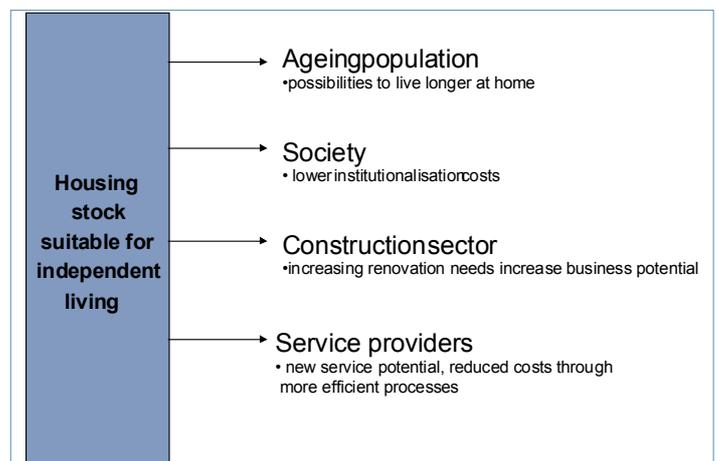
"...consumers over the age of 50 will have an impact on the foods we eat, the things we do to amuse ourselves, the way we dress, the places we travel, what we read, what we see on television, the homes we live in, the cars we drive, the hotels and the hospitals we use - all of us are going to be affected. /2/

The growing importance of aged consumers has been noticed in many lines of business. Sectors affected by the growing share of active seniors will also be including construction business and real estate business.

From the construction sector point of view one central housing related need is that the ageing population is not willing to move away from their homes as they age. /3,4/ This is the case even if living environment is not fit for the needs of the ageing dwellers. As the existing housing stock is not designed to meet the demands of ageing population there is significant market potential for the renovation sector to renovate the existing housing stock to meet these special needs.

If the existing housing stock could be renovated to make it possible for the ageing population to live independently at their homes longer it would be beneficial to many actors. Some of these are presented in figure 1. This issue is contemplated more thoroughly in the following section.

Figure 1 Some advantages of the housing stock suitable for independent living.



1.2 Goals

The main goals of this study are:

1. to give an overall picture of the existing housing stock in EU15 countries
2. to describe the aged population (ageing population) as a market segment for renovation sector
3. to outline economic rationales of different actors to face the demands from the aged population (and the ageing population).Research method

This study was carried out mainly as a desk research. Several important data sources are available dealing with different aspects of the issues concerned. Data from different sources was joined to answer the research problem. The desk research was supplemented with few expert opinions.

1.3 Limitations

Aged segment is defined as the population over the age of 65. This must be separated from the ageing population. Ageing population is the population that does not belong to the 'aged segment' yet but is already near that age. In Europe and in the US this is the 'baby-boom' generation born in years after the WW II.

The main limitation of the study is that the needs of aged segment and ageing population are contemplated from a quite narrow point of view. This point of view is the one of the residential construction sector. In this study the residential construction sector consists of new residential construction and residential renovation.

For the residential renovation sector the existing housing stock is really important. The existing housing stock is defined as the building stock built for housing purposes. The housing stock is divided into two categories: houses with up to two dwellings and the houses with more than two dwellings (multi-dwelling buildings). The main interest is on multi-dwelling buildings and the multi-storey apartment buildings.

Final limitation is geographical. The data is collected from the EU-countries (2002; figure 2). As the author is from Finland and thus the knowledge of Finnish conditions is best, it is used as a 'case country' in some occasions.

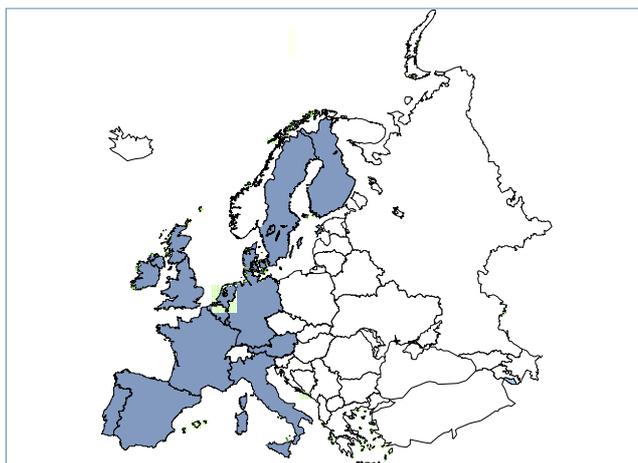


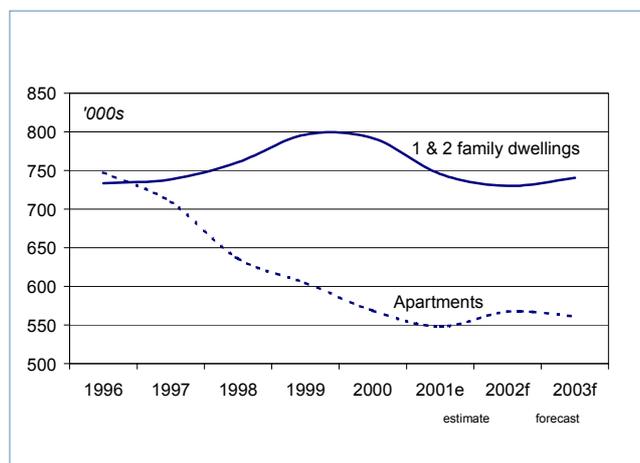
Figure 2: The geographical limitations of the study. The EU15 countries 2002.

2. Existing housing stock

2.1 New residential construction

When the existing housing stock and its surroundings were designed and planned the questions concerning the needs of special groups were usually not taken under consideration. In new residential construction these issues are in some degree better handled. However, there are two reasons why new construction does not solve them. First, the major share of the ageing population is not willing to move to new dwellings even if the dwellings were better suited for their special need /4/. Secondly, new residential construction can't supply enough new suitable housing units for already aged people and for the ageing generations to come (figure 3).

Figure 3. Dwelling completions in EU15. (Thousand dwellings)
Source: Euroconstruct

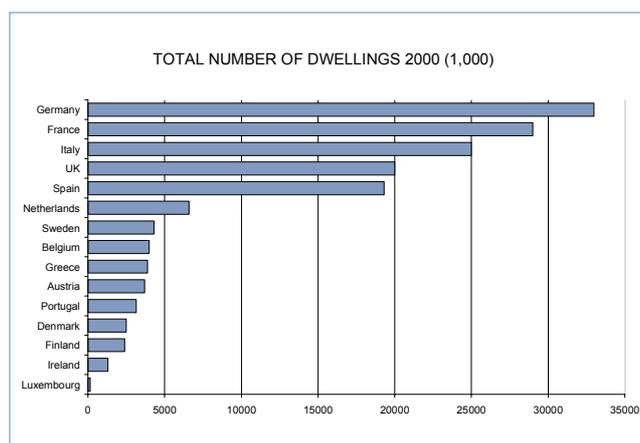


As the new house construction alone can't face the needs of the ageing population, the importance of the renovation sector is emphasised. To estimate the market potential for different improvements in existing building stock it is important to have an overall picture of European dwellings and housing stock.

2.2 Ageing households

There are 150 million dwellings in EU15 countries. Some 120 million (80%) of these are in 'the big five' countries (France, Germany, Italy, Spain and UK). (Figure 4.)

Figure 4. Number of dwellings in EU countries 2000. Source: EU-housing statistics



The degree of urbanisation in EU-countries is high and as the consequence most dwellings are in urban areas. In most countries the urbanisation trend is already slowing down, as the degree of urbanisation is already high. There are still some countries with lower urbanisation rates (Ireland, Portugal, Austria, Italy, Finland and Switzerland). It can be expected that the degree of urbanisation will still grow in these countries.

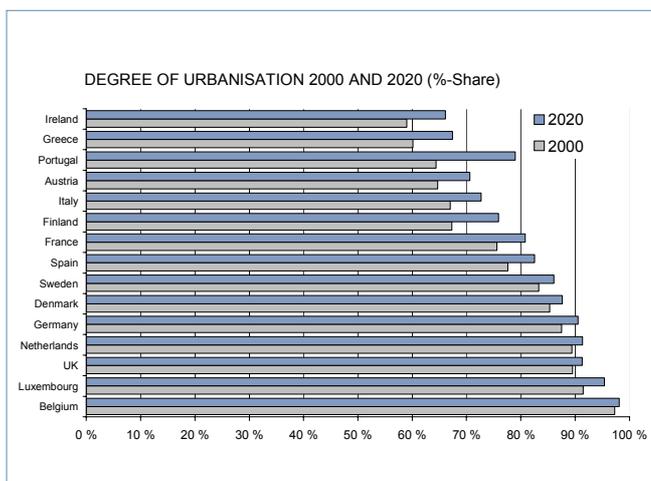


Figure 5. Degree of urbanisation 2000 and 2020 (%-share). Source; UN Population Database

With this information it is possible to estimate the number of households with aged inhabitants in urban and non-urban areas. According to this there are about 26 million dwellings with elderly population in urban EU area and 7 million in non-urban areas. (Figure 6)

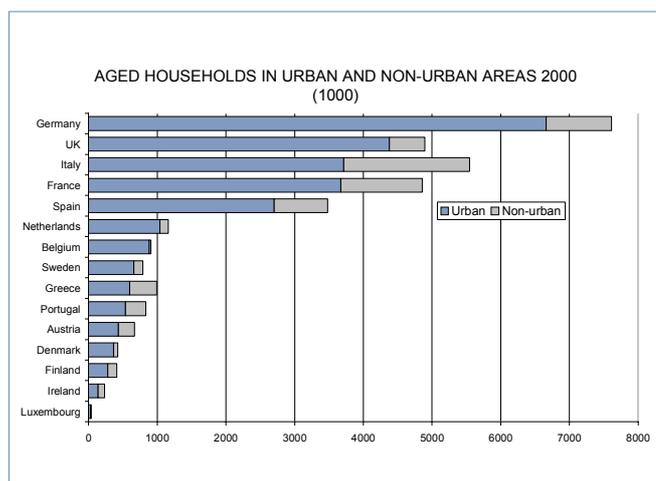
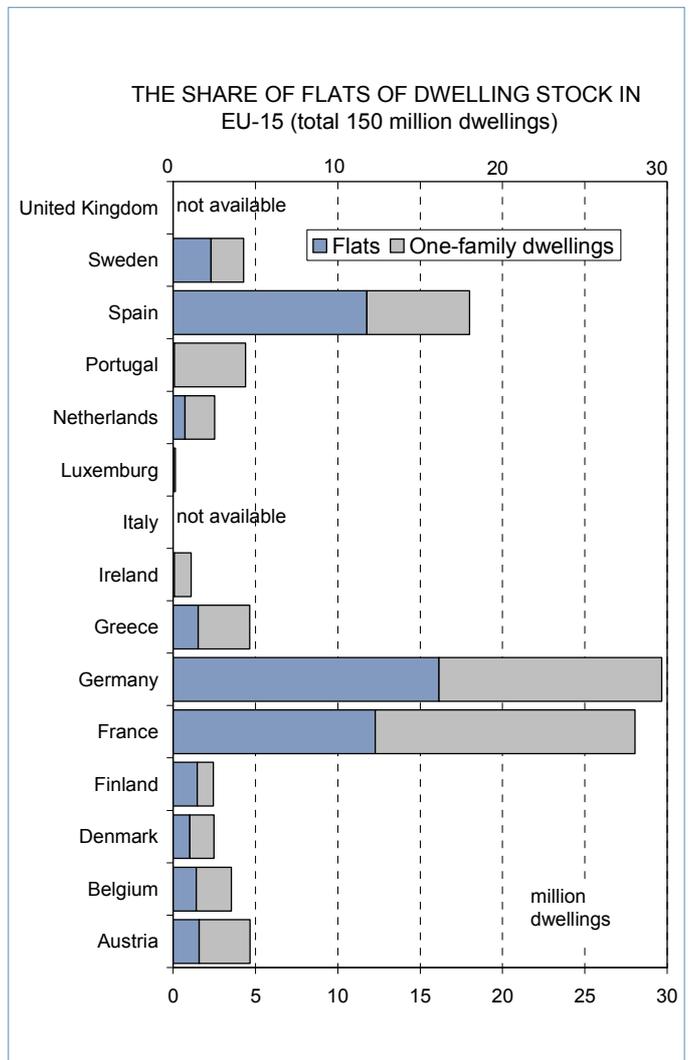


Figure 6. Aged households in urban and non-urban areas 2000 (thousands).

2.3 Building types

Over half (52%) of the EU housing stock is one-family houses /5/. This is some 78 millions one-family houses and 72 million dwellings in buildings with more than 1 apartments¹. In picture 11 the share of all flats and one-family dwellings is broken down to the country level.

Figure 7. The shares of one-family dwellings and flats in EU-countries (million dwellings)
Source: EU Housing statistics and VTT



¹ According to Finnish classification this means terraced houses and blocks of flats. Statistical classifications in different EU-countries vary in this respect and as a consequence it is almost impossible to commensurate these classifications.

Roughly estimated this means 17 million one-family house and 16 million apartments with elderly inhabitants. If the share of one family houses and multi family houses were the same in urban and non-urban areas there would be some 12,5 million urban multi-family dwellings with aged inhabitants and some 3 million urban one family houses with aged inhabitants. As there are typically more multi-family houses in urban areas the share of multi-family dwellings is in some degree higher and the share of one family houses is lower.

2.4 Age of the housing stock

The housing stock in EU countries is quite young. Over half of it has been built after the World War II. One exception is UK where a major part of the housing stock dates back to the time period prior to World War I.

About third of the EU-housing stock has been built in the time period of 1946 to 1970. (Figures 8 and 9) The age structure of EU housing stock is depicted in figure 8 and age structure of the housing stock by country is depicted in figure 9.

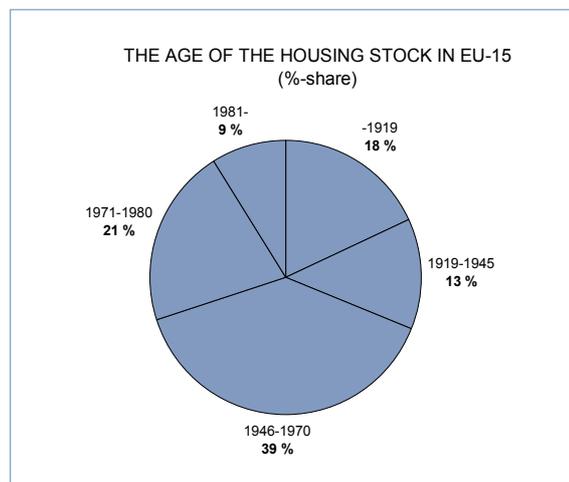
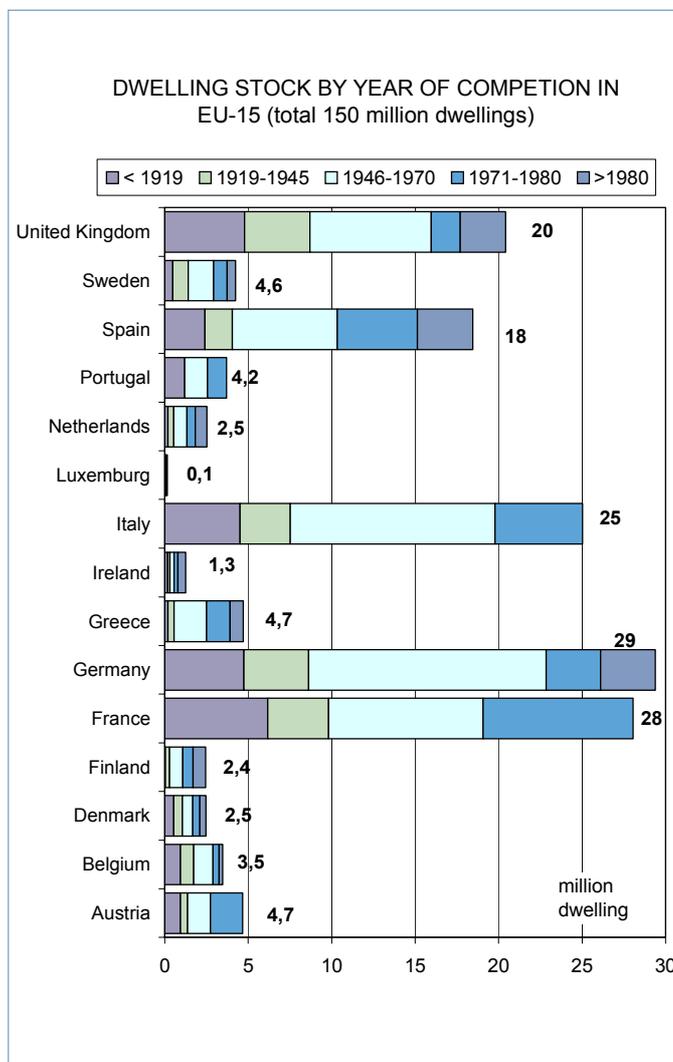


Figure 8. The age of the housing stock in EU15. (%-share) Source: European Housing Statistics

Figure 9. Dwelling stock by the year of completion. (Million dwellings) Source: European Housing Statistics



If it is again assumed that the aged households are equally distributed to this building stock, it can be estimated that there are following amounts of households with aged population live in buildings constructed in different time periods: building period prior to 1919 6 million households; building period 1919-1945 4 million households; building period 1946-1970 13 million households; building period after 1971-1980 7 million households; and building period after 1981 3 million households.

2.5 Some renovation needs for ageing population ('structural needs')

In a traditional residential building the special needs of the ageing residents are often forgotten. If these were taken under consideration, the life for the aged would be easier and it would be possible for them to live there longer. Some typical and easily fixed problems in apartment buildings (in public spaces) are:

- Rigid locks
- Doors that open to the wrong direction
- The location of the light switches
- Timing of the lighting in the staircase is too fast
- Too few handrails
- No elevators
- Spiral stair
- High doorsteps /6/

There are also problems inside the apartments. Some of these are

- Differences in altitudes
- Bathroom furnishing
- Narrow doorways
- Small bedrooms
- Standard measures for example in kitchens /6/

If these and other constraints could be taken under consideration in renovations the problems of accessibility would be lessened. However, this would not solve the problem entirely, as the surroundings of the houses should be accessible too. As the aged population has needs to go shopping, socialising and taking care of other matters there should be also accessible and effective means of transportation and the business premises, hospitals, offices and other public spaces should be accessible too. /7/

2.6 Market potential

It is noteworthy that new construction can't build enough dwellings suited for the elderly. This puts the pressure on the renovation sector to make the renovations necessary to meet the needs of the aged.

If the EU countries are contemplated as potential market areas for the actors interested in the renovations directed to help the ageing dwellers following conclusions can be made from the previous chapter:

- The majority of ageing households are in the 'big 5' countries
- The biggest market potential is in urban areas
- There are almost as much one-family dwellings as there are other dwellings. But if the main interest is in urban areas, it can be assumed that the importance of multi-family houses grows.
- A significant share of dwellings stems from the building period from 1946 to 1970. As the building methods, materials and the structures nearly follow a standard in this period, it is easiest to productise different solutions to these buildings.

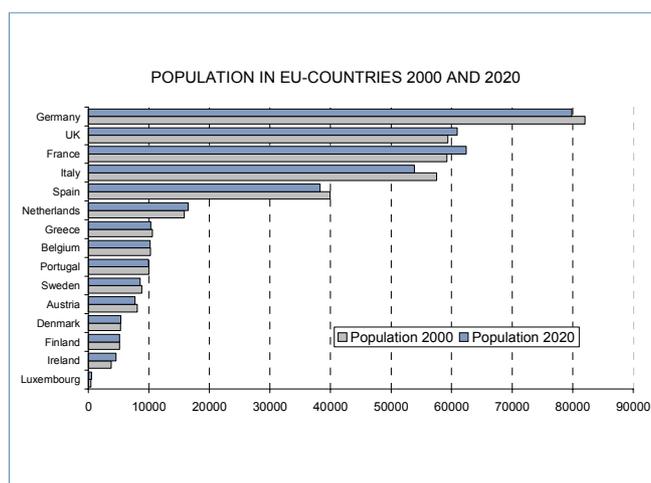
The market potential is affected also by the fact that both new residential construction and residential renovation are subsidised in many EU-countries by the public sector. This subsidy can be direct or it might be more indirect as in the case of tax reduction. (See section 4.1.)

3. Aged population and ageing population

3.1 Background

The total population of European Union is about 374 million (2000). If individual states are examined there are big differences as this population is unequally distributed between individual countries. The smallest population is in Ireland, where the population is 'only' 4 million. In the other extreme the population of Germany is over 82 million. (Figure 10.)

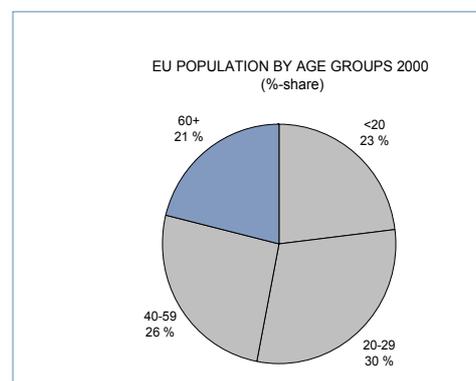
Figure 10. Population in EU-countries 2000 and 2020. Data-source: UN Population Database.



The EU15 population in the long run is declining. This is due to changes in the population pyramid. The countries having less population in 2020 than in 2000 are marked blue in picture one and the ones with bigger population have red bars /8/.

Population pyramid in EU countries is changing so that the number of the elderly population is growing fast. Already in 2000 the number of elderly people was quite high, as there were about 78 million EU citizens aged over 60 years. This is 21% of the total population. /8/ (Figure 11.)

Figure 11. Population by age group 2000. Data source: UN Population Database



3.2 Segmenting the ageing population and aged population

It is very important to recognise that the aged segment (in 2000 some 78 million people) is not a heterogeneous group. Today's ageing consumer is like everyone else and naturally the basic character traits do not change with age. Ageing consumers are very much like any cross-section of any age group in terms of personality. /2/

Even if the personal characteristics don't change much with the age, the physics do. Some 40 % of women in their 60ies have serious difficulties with cleaning and this share grows to 54 % among the women in early 70ies. /9/ As this is the case it seems reasonable to further segment the aged population by age.

For example Treguer /10/ have divided the group into following sub-groups:

1. **"Masters"**. Age group 50-60. Characteristics: Greatest earned income with minimum expenses (no more mortgages, no more children to be supported etc..) Most masters are still in good shape, but there are already some signs of ageing. For example visual capacities are lower than before. Most of these changes do not affect the ability to live everyday life as previously but some masters may for the first time notice that the everyday tasks are more physically demanding than before. They may also make some contemplation about their capacity to perform these tasks in the future.
2. **"Emancipated"**. Age group 60-70. Characteristics: Freedom from work, children and stress. An active time period with lots of new possibilities. There begins to be more physical constraints that disturb everyday lives of the 'emancipated'. More help is needed and services and structural changes in the environment that help the everyday lives of this group are in many cases necessary. One example is that this age group has difficulties to climb up to apartments in upper floors and elevators become more and more handy. With some adjustments the independent living is still possible and enjoyable.
3. **"Withdrawing"**. Age group 70-85. Characteristics: The active life style begins to slow down. Especially women may face loneliness. Poverty and ill-health may be problems. The physical constraints are more persistent and severe. Some 30 % of this group need continuing and considerable help in their everyday lives. And half of this group needs some help every now and then. /9/ The quality and accessibility of the surroundings are even more important. Living in houses for seniors or in sheltered homes are viable alternatives for this age group.
4. **"The oldies"** Age group over 85. Characteristics: Poverty and ill-health may be problems. Over 20 % of 'the oldies' need a lot of help every day. The problems with everyday life are in many cases remarkable. This segment may be able to live independently (with some help), in senior houses or in sheltered homes, but growing share of the oldies are also in different institutions such as in old people's homes or hospitals.

Figure 12 depicts how the European population is divided into these groups.

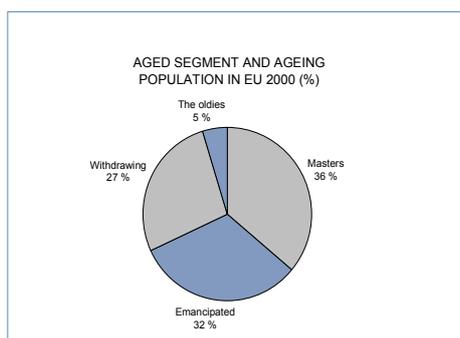
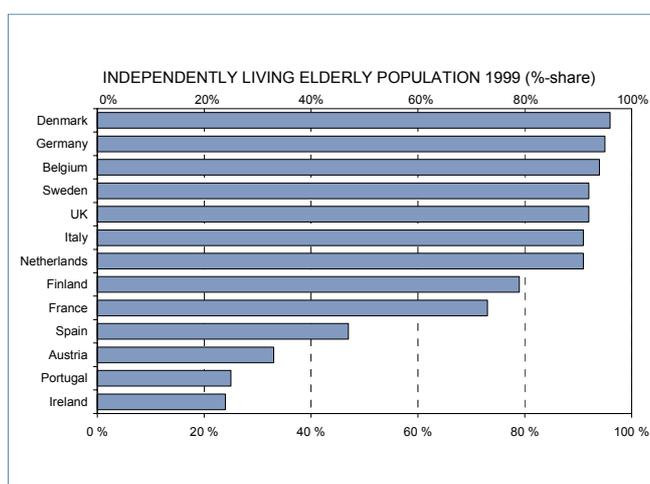


Figure 12. Aged segment and ageing population in EU 2000. Datasource:

3.3 Living styles of the segment

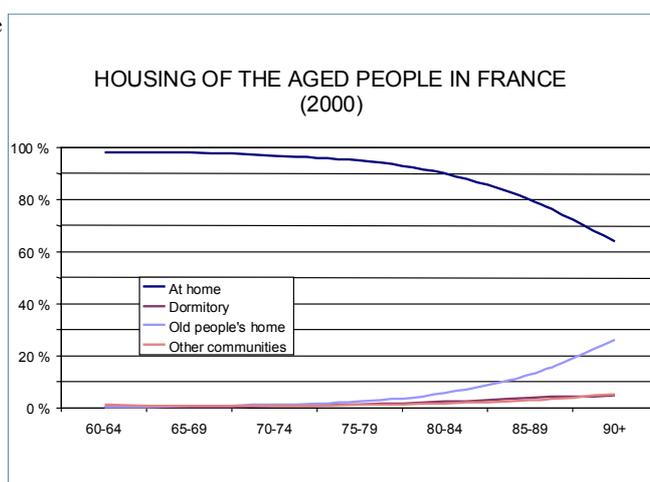
There is quite big a difference in the living styles of the elderly population in different EU countries. In some countries the aged population live independently to a great degree. These countries are for example Denmark and Germany where almost 100% of the ageing population live independently at their own homes. This is not the case in countries such as Portugal and Ireland where independent living is more rare. (Figure 13)

Figure 13. Independently living elderly population 1999. Information not available from Luxembourg, and Greece. Datasource:nav.



The possibilities to live independently at home decreases with age. The sub segments 'withdrawing' and 'the oldies' live more and more frequently in different kinds of institution. However it is noteworthy that for example in France over half (65 %) of the population over 90 still live at their own homes. (Insee) (Figure 14)

Figure 14. Housing of the aged people in France 2000. Datasource:INSEE



3.4 Need for assistance in independent living

Independent living at home becomes more difficult as the dwellers age and the fulfilment of everyday tasks becomes harder for them. Family, friends and relatives can assist with these tasks, but in some cases this help is not enough or it is not available. Some problems of Finnish 'emancipated' and early 'withdrawing' segments are presented in table 1.

Table 1: Physical constraints of Finnish elderly population. Source: Finnriski - seniori -research 1997 and VTT /9/

Serious problems or total inability	Age group 65-69 (%)	Age group 70-74 (%)
Hearing, female	13	18
Hearing, male	22	32
Eyesight, female	15	29
Eyesight, male	7	14
Carrying the groceries, female	16	29
Carrying the groceries, male	9	19
Moving in staircases, female	24	39
Moving in staircases, male	15	24
Do the everyday shopping, female	8	18
Do the everyday shopping, male	4	11
Public transportation, female	10	19
Public transportation, male	4	12
Heavy cleaning, female	40	54
Heavy cleaning, male	23	30

The hardships of independent living can be lessened in many ways. In addition to families, friends and relatives it is possible to obtain helping services from non-profit organisations, from governmental actors or buy it from different service providers. Examples of such services could be:

- meal services
- transportation services
- conveying services
- security services
- clothing services
- cleaning services
- real estate management /9/

Services supporting the independent living of ageing population can be divided into 3 groups.

- 1. Services produced in customers' homes.** For some elderly it is laborious to go to the service provider and thus it is easier for the service provider to go to the aged customers. Such services may be for example cleaning services, nursing aid and meal services.
- 2. Services linked to customers' residential surroundings.** Some services are not provided in customers' homes but are still closely related to customers' living quarters. Such services are for example home delivery services, security services and transportation services.
- 3. Services not linked to customer's residential surroundings.** Some services are not linked to customers' living quarters. If these services are needed it is important to make it easy to access these services. This puts pressures to as well to the service providers as (for example) to the transportation and community planning. Examples of such services are retail enterprises or health care.

Finnish new construction sector has in some degree noticed that these services are all in some degree dependent on the residential environment. In such cases the apartment buildings designed for the ageing population are located really centrally near all services so that the services in group 3 above are well accessible.

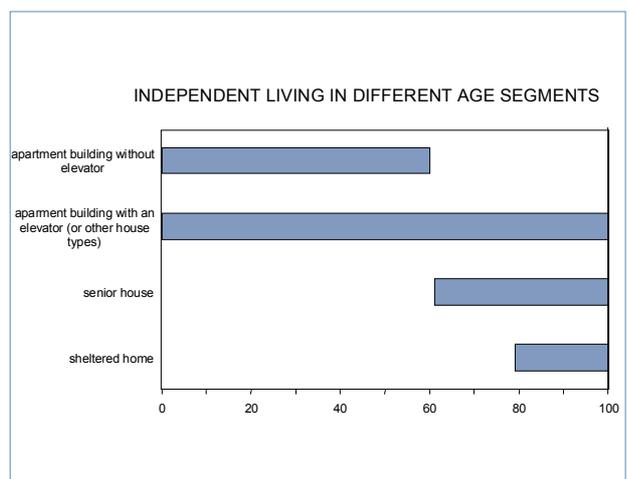
For service providers in groups 1 and 2 it is also important that the building and the apartments are designed so that the delivery and production of goods and services is easy. If there is, for example, no elevator in an apartment building it may be really difficult or even impossible to provide services for the dwellers in upper floors.

Also the apartments themselves should be designed to meet the needs of the service providers. If for example the bedrooms are too small for nursing activities it may be necessary for the inhabitant to move to other accommodation earlier than if the bedroom were roomy enough.

As most of the existing housing stock is not designed to meet these 'service' demands it is a challenge for the renovation sector to create solutions that enable and support these services.

An accommodation that support the 'structural needs' (chapter 2.5) and 'service needs' (chapter 3.5) of the ageing population is neither entirely independent living nor institutionalised living. This is a new developing form of living in an ageing society, which today is in many cases referred as living in a senior house. (Figure 15)

Figure 15. Independent living in different age segments. Datasource: VTT /9/



4. Financing the changes

Though the need for renovation springs from ageing people and their special needs, the financing may come from other sources. In owner-occupied apartments the owner-occupier typically finances the renovations. In rented apartments the financing comes more typically from the owner of the apartment. In both cases it may be possible to have some funding from the public sector. These issues are contemplated in following sections.

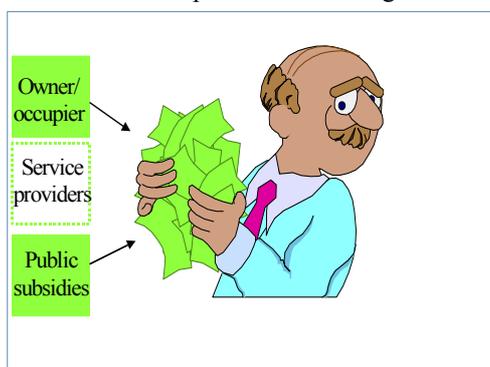


Figure 17 Costs of some nursing services in Finland 2000 (EUR/YEAR). Datasource VTT /9/

4.1 Public funding

From the societal point of view it is also worthwhile to support independent living as long as it is possible, as the costs of independent living are much lower than the costs of living in different kind of institutions. (See for example figure 17).

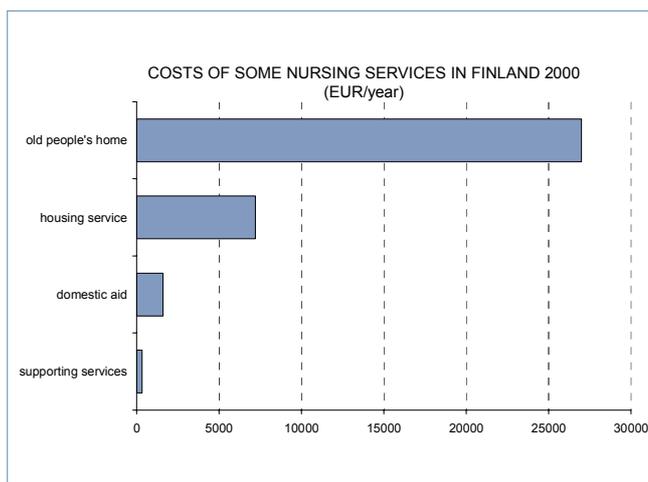


Figure 16. Actors funding the renovations. Datasource:VTT

As the European population ages, these issues are gaining more importance. An example of growing attention to the issue is, that in Finland it has been counted that it is gainful to markedly aid the elevator installations in existing apartment buildings with no elevator if this makes it possible for few aged inhabitants to live there a little longer.

Of course all aids on renovations and new construction are not justified with the needs of the ageing population. Some overall subsidies are presented in table 2.

Table 2. Subsidies on renovation and new construction. Source: European public policy concerning access to housing.

	Financial assistance	Tax Relief
Austria	n.s.	Until 1999, deduction of at most 25% of renovation costs allowed
Belgium	n.s.	For the purchase of real property or for works (financed through a loan of over 21,070 EUR)
Denmark	No special measures, but both the private and the social rental sectors may receive subsidies for urban renewal (using 40% on the total investment)	n.s.
Finland	No incentives for new construction (assistance goes to the social sector)	Reform of the taxes on capital in 1993
France	ANAH; subsidies for the improvement of housing	Status of private landlord: Perissol depreciation scheme, then Besson scheme Ordinary rental: common law tax deduction of 14% of taxable rental income (no conditions whatever)
Germany	Loans for dwellings with reduced CO2 emissions (favourable terms) Loans & subsidies in the new <i>Länder</i> for residential construction in city centres or rehabilitation of existing stock	For new housing, depreciation of 55% over the first 14 years (5% each of the first 8 years, 2,5% from the 9th to the 14th years) and 1,25% in each of the last 35 years
Greece	The law favours investors and owners in order to increase supply	20% tax break for maintenance costs
Ireland	n.s.	n.s.
Italy	n.s.	n.s.
Luxembourg	No	n.s.
Netherlands	Subsidies for urban restructuring in post-war neighbourhoods. Little used	
Portugal	Programme of social solidarity and assistance for rehabilitation of existing stock (1998)	Reduction of VAT rates from 17% to 5%. Low-interest loans for renovation
Spain	No financial assistance	No, apart from lower VAT rate, which applies to all dwellings
Sweden	No state intervention in the private rental sector	
UK	Central government pays housing grants to local authorities, which distribute them to private lessors	Tax incentives under the government's rental programme

4.2 Service providers

For the different service providers in public and private sectors the ageing population is a huge (potential) market as described in section 3.4. These actors also have housing stock related interests. From their point of view a functional housing stock could help them to improve their business and service processes and thus increase efficiency and productivity.

Service providing actors are not necessarily interested in funding the changes needed in the housing stock, but from the construction sector point of view there are economic grounds to deepen the co-operation between the construction sector and the home service providers so that the housing stock will be better suited for the elderly inhabitants. For the ageing dwellers the value of the real estate builds up from 4 parts: location, functionality, images and services /11/. (Figure 18)

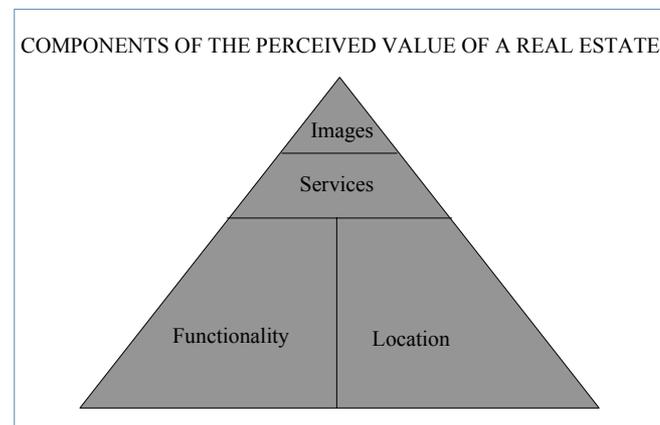


Figure18 Components of the perceived value of a real estate. Source; VTT /11/ (modified)

As the services are one component of the value, the residential buildings supporting services (technically) are of more value. This means more precious buildings, higher rents and higher resale values. In rental sector this potentially increases long-term leases, which in turn means lower costs (as the costs for seeking new dwellers decrease). /11/

In the value creation the services are today not as important in residential buildings as they are (for example) in office buildings or business premises. Their importance may grow as the values change and the European population gets older. If the real estate sector could internalise some of the services from other lines of businesses, the entire construction and real estate sector could grow. This potential is depicted in figure 19 from Finnish point of view.

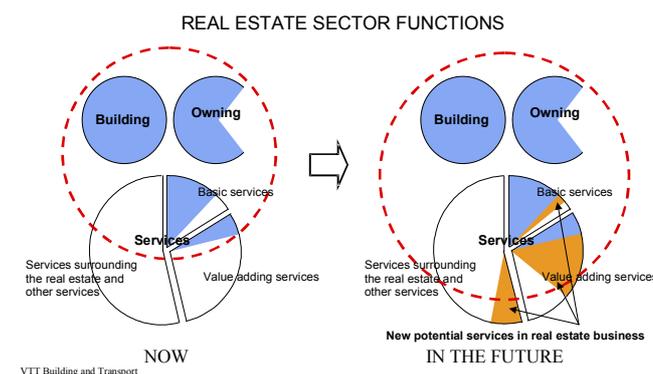


Figure 19 Growth potential from services sector. Source VTT /11/

4.3 Occupancy (ownership)

Typically the renovations are financed by the owners of the apartments. Most typical form of living in Europe is to live in an owner-occupied apartment. In this case the financing comes mainly from individual owners. Some 56 % of Europeans live in owner-occupied dwellings /12/. Some common problems in this sector are:

- The owner-occupied apartments are not suited for the ageing population.
- The level of maintenance is low, especially among lower income homeowners.
- Problems in paying back the mortgages. /12/

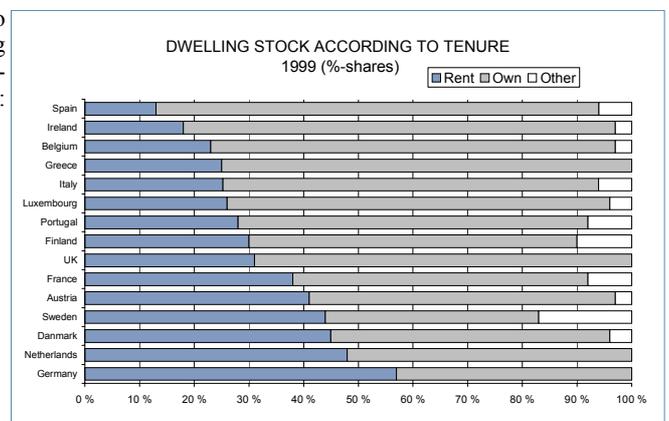
Rental sector can be divided into two quite different parts, private rental sector and social housing sector. Every fifth apartment in European level is rented from social housing sector. Following factors define social housing:

- often built with help of state finance
- subsidized by national government
- managed by municipal or non-profit organisation
- under rent control
- low-income target group /13/

Also every fifth apartment is rented privately. Private renting is more common in urban areas and especially in capitals. One problem of private rental sector is that the apartments of lower income ageing population are in many cases in a quite poor condition /12/.

There are differences in occupancy between European countries. In Ireland and Spain it is most typical to live in own dwellings whereas rented dwellings are most common in Germany, the Netherlands and in Denmark. (Figure 20)

Figure 20. Dwelling stock according to tenure 1999 (%-share). (Diverging dates: Greece 1980; Italy 1980; Luxembourg 1995; Sweden 1990) Source: European housing statistics



The ownership structure of apartments varies significantly between different countries and it is impossible to estimate these structures in EU level.

5. Summary

The housing related special needs of the ageing population can be divided into two parts. Structural needs are those that are closely connected to the buildings and their technical features. Other special needs of the ageing population could be labelled as service needs. Also these needs have technical aspects as the service providing could be made possible or easier with technical alterations as many services are produced at homes or they are delivered to the client's home. Housing issues are also linked with services that are not delivered or produced in residential building. This is a challenge among others for town planning and transportation.

With structural alterations and well functioning service providing it is possible to help the elderly population to live at their own homes as long as possible. This is desirable as ageing population wants to stay at their traditional homes even if the apartments and surroundings are not fit for their special need. Also the society gains if independent living of the elderly is possible as the special accommodation meant for the aged are very expensive to cover.

For the residential construction sector this situation could be a great market potential as there are growing needs to build new residential buildings and to renovate the already existing ones for these special needs. There could be also some special services in the life span of a building that could be internalised into the construction and real estate sector.

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