

CIBP SPRINT

COCREATING VALUABLE
CONTENT AND INSIGHTS
FOR OUR MEMBERS

Designing Apps and Digital Interfaces for Elderly





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How can CIBP leverage a coordinated way for a meaningful and collaborative innovation throughout its community?

Taking on this challenge, the CIBP team designed a solution: the SPRINT.

The SPRINT connects and engages specialists and seniors in an international approach of innovation and technology. This is a collaboration from inside and outside CIBP members to generate knowledge, tools and experiences to be used by all members. Based on a methodology of innovation sprints, our focus is to produce relevant material from within the community to serve real challenges.

product trends, the SPRINT team will deep dive in the matter with data and cases and share same report drafts to encourage CIBP members to share their own experience. After that, an insightful and practical report will be produced.

Community engagement is the backbone of a successful SPRINT. Reach out to the CIBP team to co-create the next one.

How does this work?

After selecting a theme of innovation and technology that has multiple implications in banking and financial services, in coop models or



Introduction

An ageing population presents some challenges to organizations. Products and services that are offered (and have always been offered) may not suit the needs and reality of the elderly. The United Nations World Population Prospects: The 2017 Revision indicates that the percentage of the population aged 60 and above grew from 7% to 15% in the regions where the CIBP members are located. The data show this trend will continue to increase.

How are we taking this as an opportunity and designing products elderly-centered? How do we take into account the elderly user experience when developing services and processes?

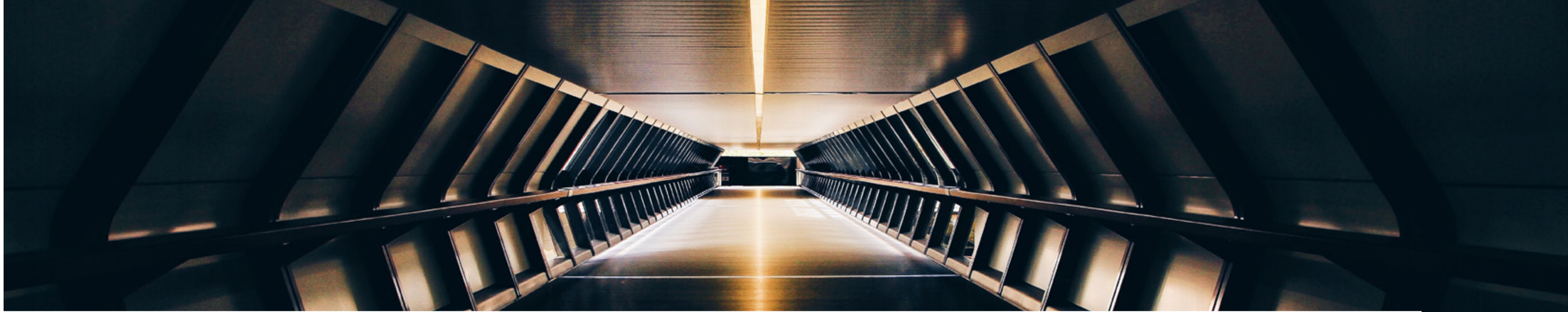
The digital revolution and the Fourth Industrial Revolution pushes the integration of digital platforms and devices into our daily life. To think about the use for those digital natives and those digital immigrants leads to a strategy of user experience that has to include aspects of functionality, accessibility, usability and aesthetic in the product.

Experts' experiences, data, projects and groups that are shaping the way we face ageing are gathered in this report to give organizations some guidelines needed to deep dive into the challenges for the elderly. Enough information and relevant insights can drive innovation for this crucial part of our population.



CONTEXT

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4th Industrial Revolution

The World Economic Forum (WEF) reported in 2015 that previous industrial revolutions liberated humankind from animal power, made mass production possible and brought digital capabilities to billions of people. This 4th Industrial Revolution is, however, fundamentally different. It is characterized by a range of new technologies that are fusing the physical, digital and biological worlds, impacting all disciplines, economies and industries, and even challenging ideas about what it means to be human.

The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production. Now a Fourth Industrial Revolution is building on the Third - the digital

revolution that has been occurring since the middle of last century. It is characterized by a fusion of technologies that are blurring the lines between the physical, digital, and biological spheres.

However, Professor Schwab, Founder and Executive Chairman for the World Economic Forum, alerts on the current situation: “Organizations might be unable to adapt; governments could fail to employ and regulate new technologies to capture their benefits; shifting power will create important new security concerns; inequality may grow, and societies fragment”. So, the actions to the Fourth Industrial Revolution must be integrated and comprehensive, involving all stakeholders of the global policy, from the public and private sectors to academia and civil society.

The world has the potential to connect billions of people to digital networks, dramatically improve the efficiency of organizations and even manage assets in ways that can help regenerate the natural environment, potentially undoing the damage of previous industrial revolutions.



Generations: Baby Boomer, X, Y and Z

Concept

Classifying life periods of individuals is a challenge. However, there is a general consensus regarding the existence of four generations: Baby Boomers, X, Y (or millennials) and Z.

Another issue that must be taken into consideration is the transitional period between generations. Those born in the crossover years carry behavioral and interaction aspects with technology similar to the two generations in which they transit. As you can see from the transition dates, the periods in question are getting smaller. “We saw a steady decline in the period of each generation and transition generations. The younger ones tend to be shorter and shorter. And this is due to the speed at which technological and social changes have taken place in today’s world,” says Aline Tobal of the Standard Intelligence Center (CIP).

American Classification of Generations

Baby Boomers: 1945 - 1964

Generation X: 1965 - 1979

Generation Y: 1980- 1994

Generation Z: 1995 - Current

The four generations coexisting on the 4th Industrial Revolution impact parameters and different ways of developing leadership and entrepreneurial skills, facing the challenges of globalization and technology, according to INSEAD's study, a global business school, published in the Harvard Business Review in 2017.

But responses varied from country to country: for example, in the Nordic countries, respondents were significantly less likely to covet leadership roles than those in Mexico. Among Gen Y respondents, 76% of Mexicans said the leadership role is important, but only 47% of Norwegians said the same. 77% of American Gen Y professionals said that gaining leadership position was important to them.

Concerning entrepreneurial ambitions, there is a strong interest in entrepreneurship across all three generations. Results show that one in four students (Gen Z) is interested in starting their own business. Among those already in the

workforce (Gen Y and Gen X professionals), one in three yearned to be entrepreneurs. Gen Y professionals in Mexico (57%) and the UAE (56%) were most interested in starting their own businesses.





Demographics

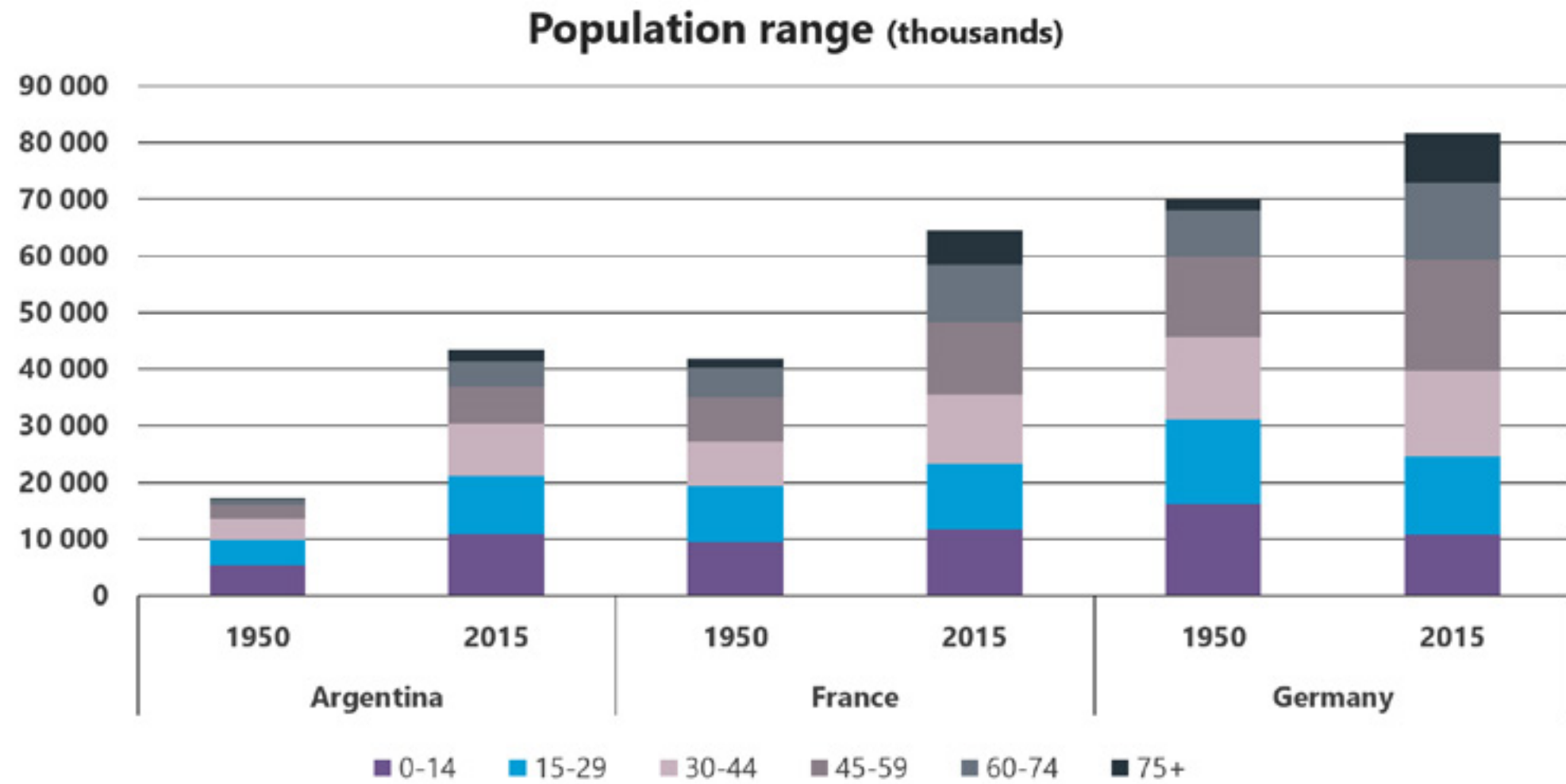
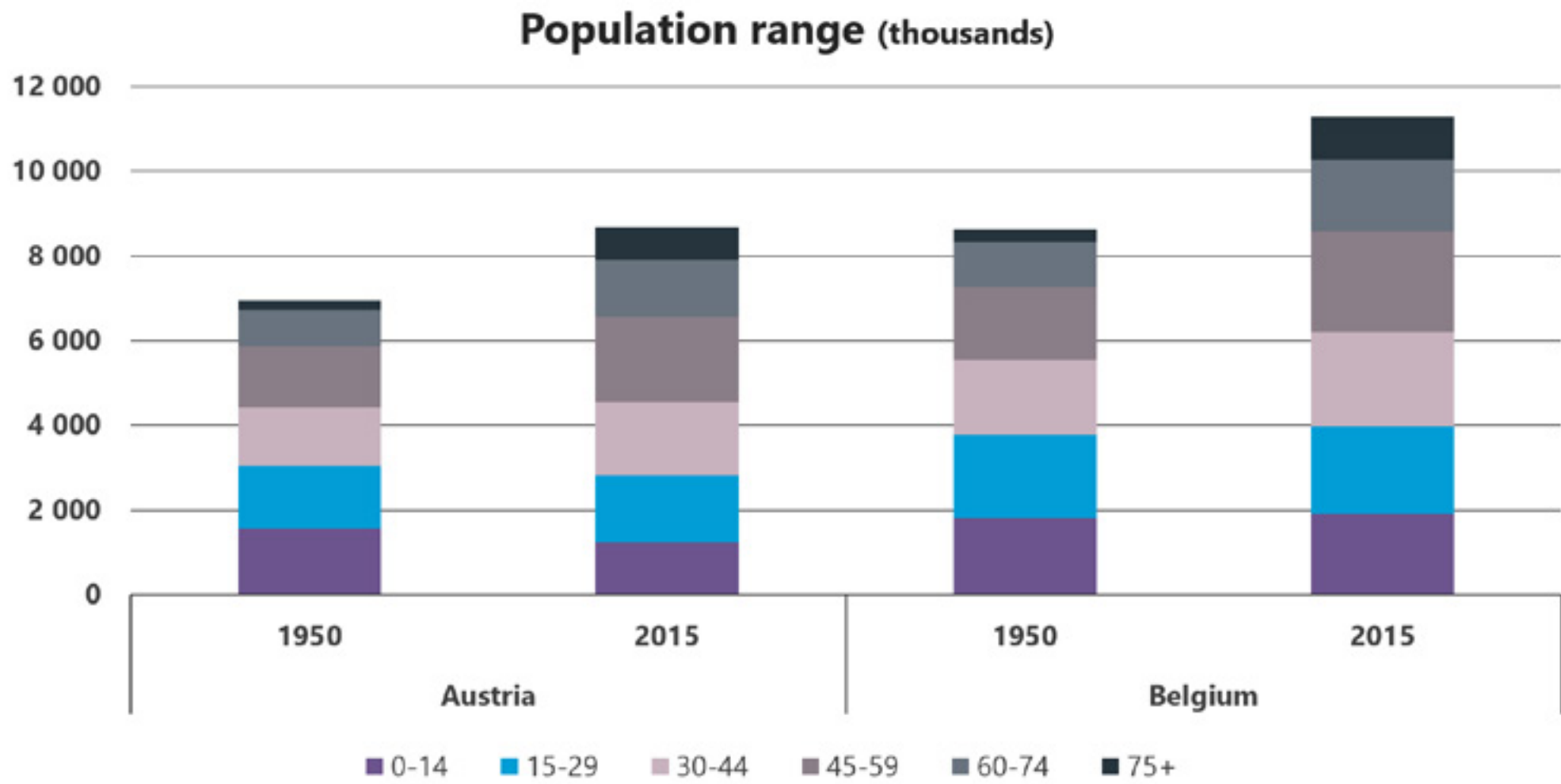
According to the United Nations' 2017 Revision, the current world population of 7.6 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050 and 11.2 billion in 2100. With roughly 83 million people being added to the world's population every year, the upward trend in population size is expected to continue, even assuming that fertility levels will continue to decline.

Confederation of Popular Banks members are. The UN World Population Prospects: The 2017 Revision brings relevant numbers to understand the trends of the population growth and of the ageing population.

For this report, we take on the data from the regions and countries where the International

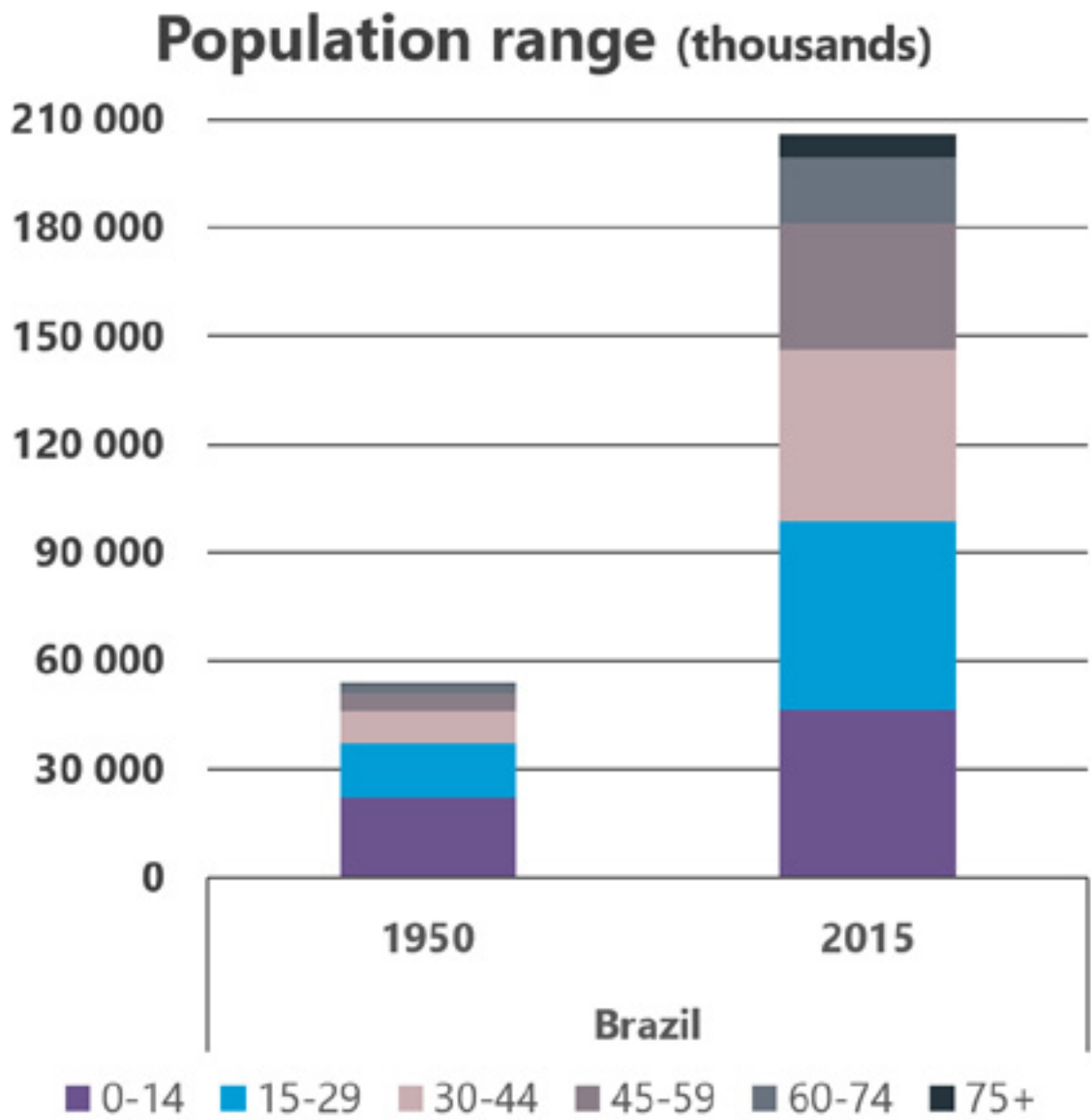
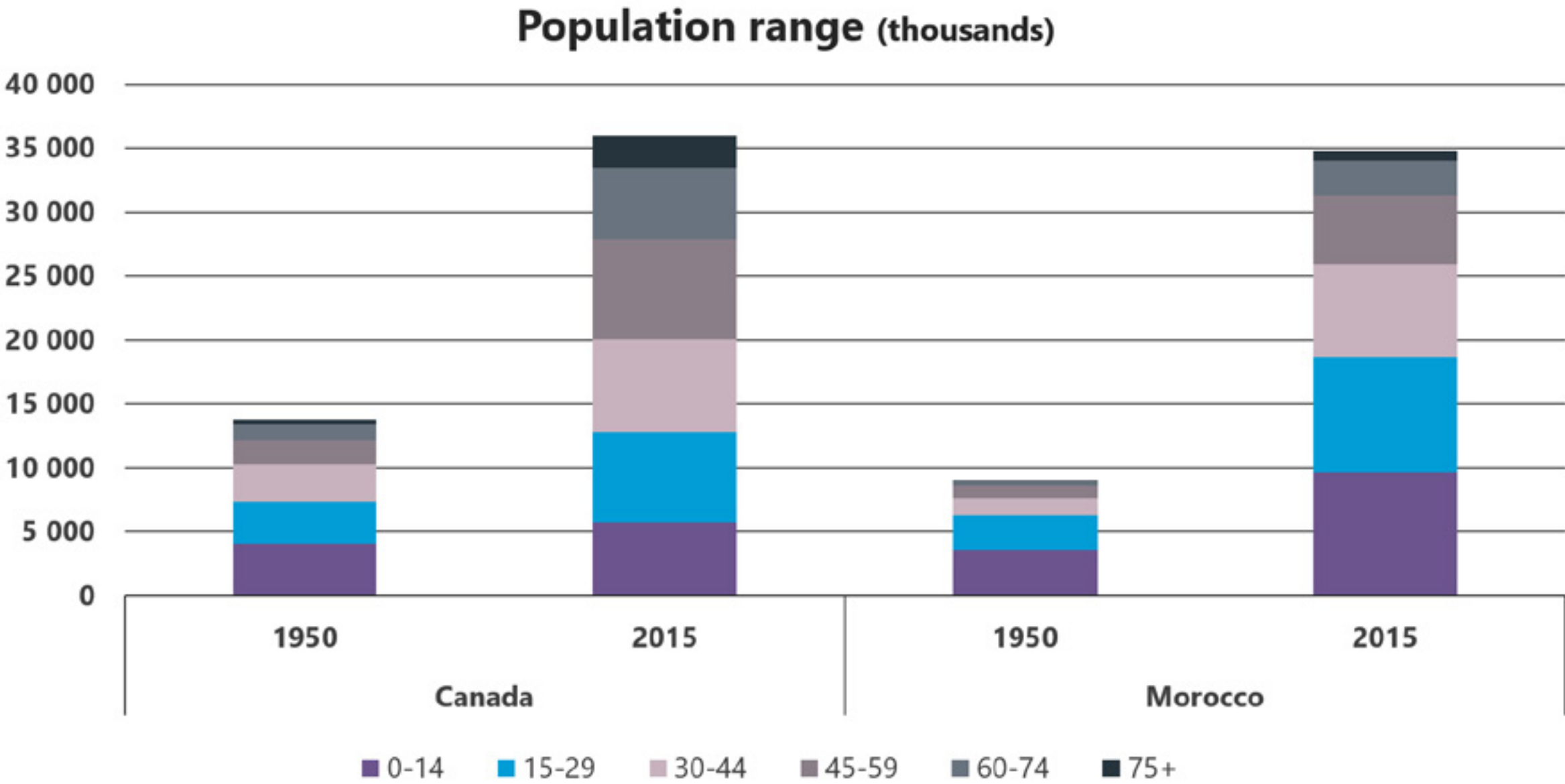
1) Population for each country in 1950 and 2015 by age range;

Austria, Belgium, Argentina, France and Germany



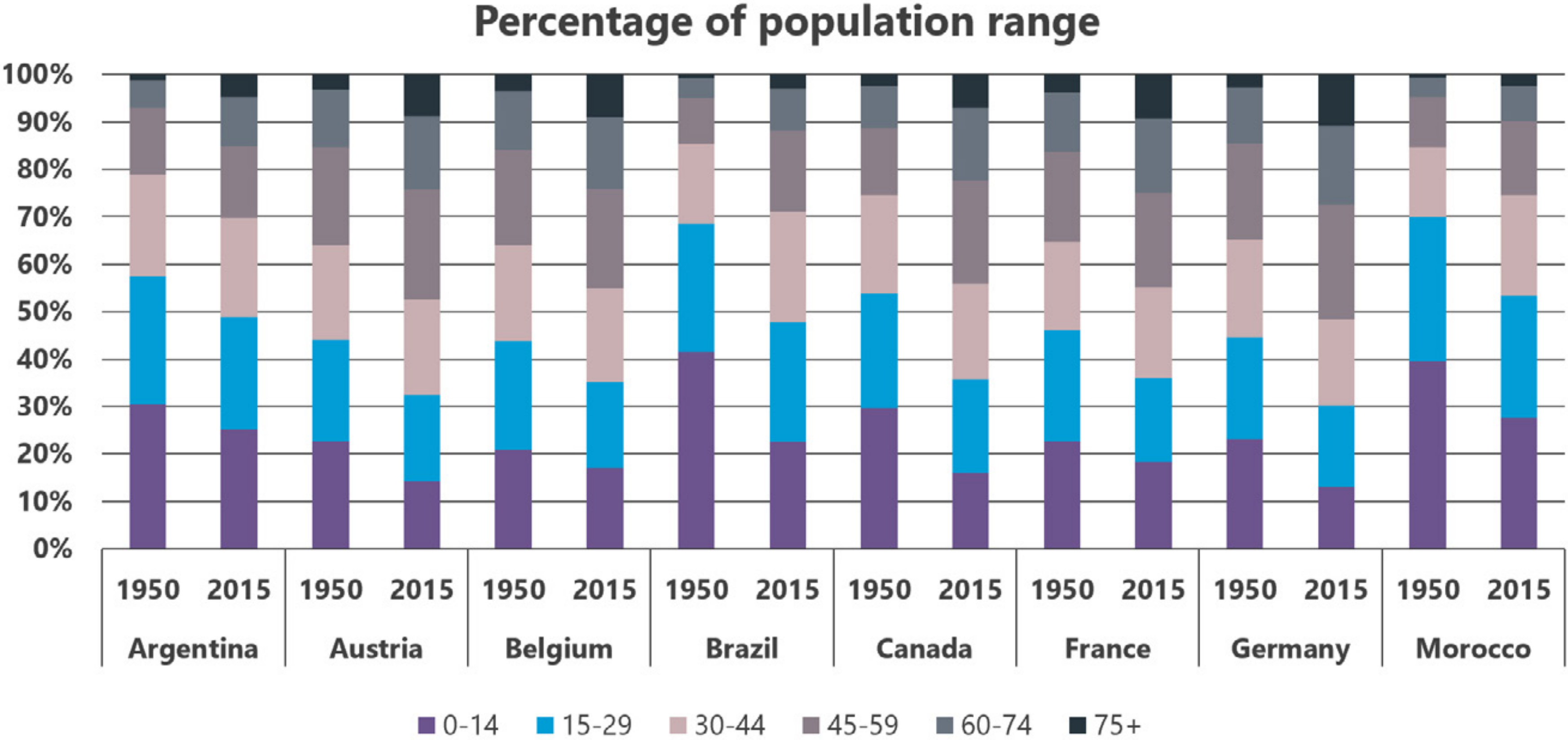
2) Population for each country in 1950 and 2015 by age range;

Canada, Morocco and Brazil



3) Population by percentage of age range

Argentina, Austria, Belgium, Brazil, Canada, France, Germany and Morocco





Europe (Belgium, France, Germany and Austria)

Against this background of rising global population, there has been a considerable slowdown in the pace of population expansion within the EU, a pattern that has been repeated in many other developed world economies. Aside from Japan, the EU is the world's most rapidly ageing region in the world.

There were 511.8 million inhabitants in the EU-28 as of January 2017. This equated to less than 7% of the world total, almost twice as high some five decades earlier. The pace of population growth in the EU-28 is expected to slow down further. Projections indicate that the total number of inhabitants in the EU-28 will stagnate and decline within the next 30-40 years.

The first chart shows us the slower pace of population growth for European countries and the increasing number of those aged 60 and above. The second chart indicates that in some countries like France and Germany, this range of 60 and above corresponds to up 20% of the population.



Latin America (Brazil, Argentina)

Latin America is one of the most urbanized regions in the world, with the majority of residents living in cities. Made up of 20 countries and 13 dependencies, the estimated population of the area in 2016 is over 626 million.

The top five most populous countries in Latin America according to the United Nations, Department of Economic and Social Affairs, Population Division (2017) estimates include:

-  **Brazil:** 204,259,812
-  **Mexico:** 121,736,809
-  **Colombia:** 46,736,728
-  **Argentina:** 43,431,886
-  **Peru:** 30,444,999

Despite the slower rise of population the in Europe, Latin America had an accelerated rate of population growth during the indicated years, as demonstrated in the first chart. Brasil grew from near 53 millions to 205 millions and Argentina from near 17 millions to 43 millions. In both countries, the population aged 60 and above evolved from 5% to over 10% during the same period.



Africa (Morocco)

Morocco, officially the Kingdom of Morocco, is the most western of the North African countries with an alternative Arabic name that translates to “The Western Kingdom.” The country has an estimated 2018 population of 36.19 million, up from 2013’s estimate of 32,649,130. The first chart visually shows the country population rising from nearly 10 million to 35 million from 1950 to 2015.

Morocco is a demographically young country, as seen in the second chart. 2018 population estimates that 27% of its population is under the age of 15, 18% between the ages of 15 and 24, 42% between 25 and 54 years old, 7% between the ages of 55 and 64 and just 6% 65 years and older. The median age of Moroccans is just 27 years old.



North America (Canada)

North America has an estimated 2016 population of over 565 million, based on national estimates from its 23 independent states but excluding non-sovereign territories like Bermuda, the British Virgin Islands and Puerto Rico. It is estimated that by 2050, the population will be approximately 685 million.

Canada's population between 1950 to 2015 followed the same population rise as its Latin American countries, raising from 13 million to 35 million. On the other hand, the population aged 60 and above grew from 11% in 1950 to 22% in 2015, as showed in the second chart.

GUIDELINES AND IDEAS FOR TRANSFORMING YOUR APP MORE ELDERLY FRIENDLY





UX - User Experience & UI - User Interface

How banks are approaching this subject

According to UX Design Agency, a reference agency in UX, the main difference from the customer perspective is simpler navigation – users no longer have to navigate dozens of sections indicative of a traditional bank or credit union. There are only seven main sections in the ‘Bank of the Future’ vision, with a clear definition for every section. The ‘Bank of the Future’ provides all services in one marketplace that looks like a store filled with financial applications. This is more engaging for users since they can easily navigate through the store and find any solution they need.

Alex Kreger, CEO of UX Design Agency, indicates that today’s digital consumers have higher expectations of their financial institution than ever before and to be successful, banks and credit unions need new and innovative approaches to attract and retain customers through highly relevant and personalized experiences across multiple channels. Kreger indicates as well UX design trends:

UX Trends

- 1 Every bank will need a UX Strategy
- 2 Financial psychology will be in demand
- 3 UX support from stakeholders will increase
- 4 Banking UX approaches will become holistic
- 5 Banking UX will be challenged from alternative user interaction platforms
- 6 Financial UX will become more personalized
- 7 Bank users will expect completely digital UX
- 8 Banking UX will be empowered by micro-interactions and
- 9 Mobile-first is transforming into omnichannel UX

The interface of popular financial services can become a powerful source of inspiration and a good starting point. This can save some time at the start, but the user interface design is only a part of the user experience design. It is important to understand the ideas behind the design of a particular service and how it creates a user benefit and solves the real customer problems.



Opinions from experts

In order to have a deep understanding of the importance and the challenges in designing solutions for elders, two experts that lead different companies and movements working on reinventing longevity were invited to share some insights about it.



MORRIS LITVAK

A graduate in Software Engineering, Mórris is CEO and Founder of MaturiJobs, a company focused on helping mature people stay active and share their experiences for as long as they want. The platform, which connects professionals over 50 years to companies that seek experience and commitment, already has more than 60 thousand people registered in Brazil. www.linkedin.com/in/morrislitvak



SÉRGIO SERAPIÃO

Co-founder of Via Gutenberg (2003), one of Brazil's pioneering sustainability consultants, co-founder of System B Brazil, currently focused on developing impact business models, especially in the cause of longevity. He idealized and led the LAB60 + Movement, a distributed and collaborative laboratory to innovate and redefine our longevity. Fellow Ashoka and effective member of the Council of System B Brazil. Bachelor's degree in Business Administration and a Master's degree in Organizational Leadership (The Graduate Institute - USA), with an Executive MBA and a postgraduate degree in Transdisciplinarity. www.linkedin.com/in/sergio-serapiao-bab113





Technology today acts as a facilitator

According to Mórris Litvak, CEO and Founder of MaturiJobs, giving access to technology empathically to the ageing population is a path of no return. ‘We cannot think of maturity without technology as an ally and not as a barrier. It is very clear to see how this process has opened a new horizon. Technology transcends the concept of ease and convenience. Today its main value to ageing people is to combat loneliness. Technology today acts as a facilitator and connector between people.’

Thinking about user experience processes for ageing people is essential, but it is very important to understand that everything must be built in parallel with the user groups for greater

assertiveness. ‘It still has a very strong social and trust issue involved. A transition process is required: language, color and usability are still very focused on the young people, although the goal is the ageing population.’

“The ideal is to think of universal usability. One must understand that UX processes are a part of this, not the whole”, states Mórris



Bonding through empathy

For Sérgio Serapião, co-founder of Via Gutenberg and leader of the Lab60+ Movement, we still have the paradigm that the ageing population has no social function. This needs to neglect and generates social invisibility.

“We are entering a new paradigm that is where the future lies. The understanding must be that at any age we have power, demands and fragility, and that the logic of life that we’ve learnt where the old man retires and dies, is no longer valid”, states Sérgio Serapião.

Few technologies have approached the ageing population. To be effective, one must think of everything. Technical aspects such as colors, size, speed, language, and ergonomics are important to interface design. However, these are only a small

part of the equation. These technical aspects should be also be developed with the view of also reducing psychological barriers.

‘Digital fluency exists, but the most important is the psychological, it is bonding through empathy. When the psychological barrier is transposed, it becomes very easy and intuitive to learn the technology. To think of the ageing population is to think about the impact of life extension that will affect the modus operandi of all industries and in all ways of living, and the financial sector plays a crucial role in development in life, since it has a responsibility inherent in its nature to leverage the economy’, says Sérgio Serapião.

The solutions are a small part as we need to have a new insight into the global culture of ageing. Sérgio believes that ‘We should all ask ourselves: What is it to be old? We need new ways of living and not new ways of getting old because we are already old in formation. Much more than break paradigms, we need to create new realities!’

“We need new ways of living and not new ways of getting old”



UX process and UI hints

The mobile technology development is growing rapidly with the development of the smartphones and faster internet technology. This development impacts both the young and the elderly. Years ago, the elderly were not as interested in mobile technology. This stereotype of only using mobile phones to obtain assistance in case of emergencies has changed however, as said Faisal et al in the 2014 article for the International Journal of Computer Applications ‘Design for Elderly Friendly: Mobile Phone Application and Design that Suitable for Elderly’. Following this, Bornstein, UX strategy expert, wrote in 2016 an online article showing that according to all usage stats, senior citizens are one of the most rapidly growing user bases in tech usage.

Faisal et al show us four contexts that should be considered in designing for elders: Physical context - constraints such as vision, hearing and dexterity; Cognitive context - the abilities of the elderly; Social context - understanding their main social contacts, and Technology context - mobile infrastructure including the available network.

UX process and UI hints

Bornstein believes that the User Experience of users aged 65 and up is completely different from that of users of the X, Y and Z generations, making a unique challenge out of planning and designing UX for them. For this, there are some basic principles for elderly user-oriented experience design, such as:

1 Age Appropriate Contrast

Eyesight issues are abundant for the ageing population. Some users suffer from blurry vision, some darkened, and some have a very light vision. Many older users experience the appearance of dark spots in their field of sight, whereas some will suffer from a narrowing of it. It is highly important that the design support the limited vision, with high contrast. The color contrast will help the elderly to differentiate the menu. Designers, test your designs with contrast and sharpness changing filters (curves, levels, blur etc.), and decide whether there is sufficient visibility.

2 Safe Coloring

It's not common knowledge that the ability to perceive color deteriorates with age. The cells atop the retina that are in charge of discerning different hues of the same color lose their sensitivity, and this is increasingly harder to differentiate shades. In addition, due to varying factors, there is a yellowing of the eye lens, which alters the colors and makes us slightly color blind. For this, it should maintain a relatively wide coloring gap between the shades used. The lack of color contrast may lead to confusion and wrong choice of the menu.

3 Relieving Cognitive Overload

Memory issues are among the most ubiquitous complaints of elderly users. They find maintaining information in short-term timeframes difficult, which makes their day to day tasks a whole lot harder. In Mobile UI design, this coding comes into play when we use labels aside icons (a home icon with the word "Home" attached to it) and when we use directions combined with buttons that resemble the action that needs to be performed ("Send Message" instead of "Send", a "flying" envelope instead of just an envelope) etc.

So, it is necessary to divide an action into stages. It's beneficial to bind tasks that relate to each other in one stage and display any required information from previous stages. Fewer functions on the app will also easily help the elderly to remember menu paths.



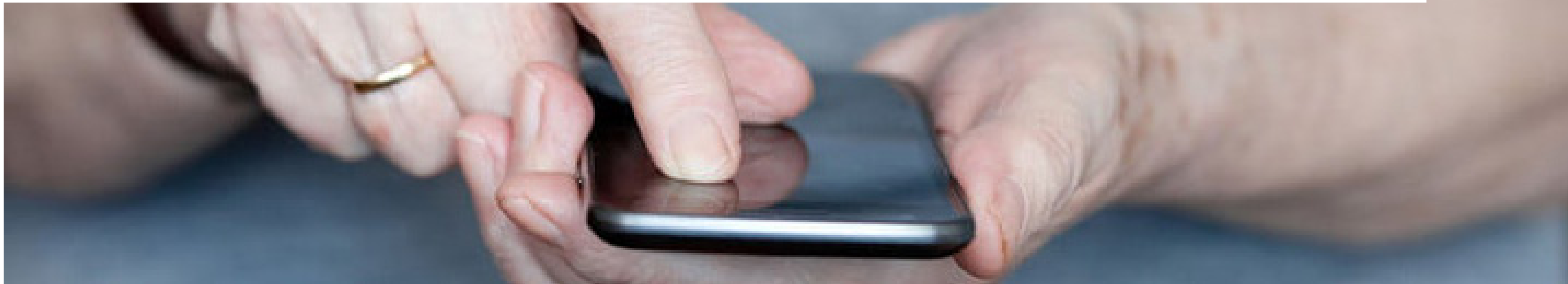
UX process and UI hints

4 Experience-Boosting Sound

Sound can be used to complement the design. Sound assists marking and emphasizing important stages or changes, such as an outgoing email sent, or an incoming message. Sound can also complete the experience for users with eyesight difficulties, but it's not recommended to rely on sound alone because many elderly users experience hearing loss in addition to their eyesight problems.

5 Large, Readable Fonts

As their vision deteriorates, elderly users find reading increasingly difficult, requiring texts to be presented in sizes that exceed the usual norms. Using fonts with thin, small letter sizes poses an unnecessary effort for users. Generally, the fonts should be coherent and relatively large. If possible, consider allowing users to customize the font size to their liking and preference. The bigger keys and buttons will help the elderly identify the entire button and reduce the probability of making the mistakes of using the applications. Also, making them further apart in the app may reduce the pushing buttons.





SUCCESS CASES



Nothing for us without us: solving user interface challenges for elders including them in the design process

Success Cases: Finance for Ageing Population

Organization: Active and Assisted Living Programme | AAL

Project: Bank4Elder

Bank4Elder is a project to make innovative and friendly user interfaces to help elderly people to use new banking modes: web, automated teller machine (ATM), TV and mobile phones. Funded by the AAL - Active and Assisted Living Programme, the project developed and validated new interfaces for existing ways of banking, with target users as active European people aged over 50.

‘What is AAL - a funding activity that aims to create better conditions of life for the older adults and to strengthen the international industrial opportunities in the area of information and communication technology (ICT). It funds cross-national projects (at least three countries involved) that involve small and medium enterprises (SME), research bodies and end-user organizations (representing older adults).

The Bank4Elder succeeded in the way it approached how to design the solution. A human-centered design process engaged over 200 users in the development of the project and ensured that the elders were in the center of the process.

This close collaboration with the elderly showed that it was not the lack of will nor interest in ICT banking solutions that made elders go



was based on heuristic tests with a checklist and usability tests by measuring times, errors, think aloud and observation protocol. Innovative methodologies such as physiological measures, eye tracking and user movements analysis were also used to record quantitative data without disturbing user interaction. The test had a high level of user satisfaction while performing all tasks and most users were able to perform all tasks with all banking interfaces. Users with low technological level encountered more problems for all interfaces and tasks, and needed help to do some tasks.

Element sizes proved tricky in mobile interfaces, providing a crucial learning on how important appropriate button sizes are in mobile apps. As a result, considering the elderly people during all stages of the process, from first perceptions to validation of conceptual design and developed solution, made more than 90% of the users capable of using the interface.

for in-person service. Lack of confidence and bad user experience curbed the use of the ICT solution.

Four aspects of interface design were considered: functionality, accessibility, usability and aesthetic. For one usability test, 9 experts put 50 older persons, with different profiles of low and high knowledge of ICT, to use prototypes of ATM, web, mobile and TV interfaces. The test

Bank4Elder findings present general recommendations of multimodal ways of banking for the ageing population. The following table shows some characteristics of elderly users which were taken into account to come up with the design requirements:

Ageing and hearing loss	
Impact	Prevalence
Audio can be difficult to discern	47% of people 61 to 80 years
Higher pitch sounds can be missed	93% of people 81+ years

Ageing and vision decline	
Impact	Prevalence
Decreasing ability to focus on near tasks	16% of people 65 - 74 years
Changing colour perception and sensitivity	19% of people 75 – 84 years
Decreasing contrast sensitivity	46% of people 85+ years

Ageing and cognitive decline	
Impact	Prevalence
Short-term memory problems	Dementia: 1.4% of people 65-69 yrs 24% of people 85+ yrs
Difficulty with concentration	Mild cognitive impairment (MCI) is more common: Around 20% of people over 70 years are estimated to experience MCI
Distraction from movement or irrelevant material	
Difficulty coping with	

Ageing and physical decline	
Impact	Prevalence
Difficulty using a mouse or a keyboard	Arthritis At least 50% of people over 65 affected
Difficulty to click small areas	Essential tremor Affects up to 20% of people over 65
Strain from non-ergonomic tasks	Parkinson’s Disease Approximately 4% of people over 85 affected



“DESIGN FOR ALL” SEVEN PRINCIPLES

Based on that, Bank4Elder shares their general design guidelines, in which they have included seven principles of ‘Design for All’ that might be helpful to be considered as a starting point summary:

1 **Equitable Use**

The design must be useful and marketable to any group of users

2 **Flexible in Use**

The design must accommodate a wide range of individual preferences and abilities

3 **Simple and intuitive to use**

The design must be easy to use and understand, regardless of the user’s experience, knowledge, skills or concentration level

4 **Perceivable information**

The design must communicate necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities

5 **Tolerance of error**

The design must minimize hazards and the adverse consequences of accidental or unintended actions

6 **Low physical effort**

The design must be usable efficiently and comfortably and with minimum fatigue

7 **Size and space approach and use**

Appropriate size and space must be provided for approach, reach, manipulation and use, regardless of the user’s body size, posture or mobility



Bank4Elder establishes the following web and mobile interface requirements for low and high-tech user profiles:

Usability	
Low Profile	High Profile
<div>- Step by step tutorial</div>	<div>- Increase letter size and contrast</div>
	<div>- Reduce the number of elements in the main screen</div>
	<div>- Increase menu and its visibility</div>
	<div>- Increase buttons contrast</div>
	<div>- Clarify technical terms</div>
	<div>- Provide symbols or graphical information to the technical terms</div>
	<div>- Avoid pull menus</div>

Usability	
Low Profile	High Profile
<div>- Direct access button to check balance and last transactions</div>	<div>- Direct access button to check balance and last transactions</div>
<div>- Reduce number of options</div>	<div>- Reduced number of options</div>

Aesthetic and emotional	
Low Profile	High Profile
<div>- Training initiatives on how to use the web or mobile apps</div>	<div>- Increase security perception on transfers</div>
<div>- Increase trust in web security</div>	<div>- Reduce commercial advertisements</div>

Functionalities and security	
Low Profile	High Profile
<div>- Check balances and transactions</div>	<div>- Check balance and transactions</div>
	<div>- Secondary services: transfers, fluctuations of retirement saving plans, delay bill payments</div>



To conclude, the Bank4Elder recommend the following requirements to be personalized:

1 Font size

2 Contrast

3 Sound level

4 Number of options showed at the main interface

5 Type/s of feedback

6 Help mode

Ban4Elder is expected to exploit these interfaces/services in four countries: Spain, Portugal, Italy and Germany. The project has a potential market of 3,900 banks and 76.5M elderly potential users. Brief estimated sales summary: 1st year – 6 banks and 76,530 users; 2nd year – 12 banks and 229,590 users; 3rd year – 24 banks and 382,650 users; 4th year – 36 banks and 765,300 users.

The partners include Vector SF, Institute of Biomechanica of Valencia, Nuromedia, New Amuser, Digintel, UDP Provincial Federation of Valencia, Association of Universities of the Third Age.

Reference:

www.aal-europe.eu/projects/bank4older

Details about the method, results, and deliverables can be found at:

<http://deliverables.aal-europe.eu/call-3/bank4elder>





Redesigning long life leads to financial sustainability

Organization: Stanford University

Area: Stanford Center on Longevity - Financially Secure

The Stanford Center on Longevity is working to transform the culture of human ageing. The Center studies the nature and development of the entire human life span, looking for innovative ways to use science and technology to solve the problems of people over 50 and improve the well-being of people of all ages. To achieve this, the center is organized in three major divisions: Mind, Mobility and Financial Security.

The mission of the Financial Security Division is to bring a unique interdisciplinary perspective to financial security issues rethinking the perceived problems around an ageing population, especially

retirement planning and the need to work longer. The division redefines traditional notions about financial capability. Our cultural norms and our standards for financial education need to change as individuals are living longer and need to be increasingly responsible for their own financial well-being.

By understanding the role that research, education and policy can play in solving these issues and by looking at the problems from multiple perspectives, the main research areas are Financial Capability, Career Lifecycle and Fraud.

Financial capability refers to possessing a level of understanding of financial matters to take effective action toward achieving individual and family financial goals. Career Lifecycle defines work and retirement in face of increased longevity. Fraud brings different views on fraud prevention.

Reference:

longevity.stanford.edu





CONCLUSION AND OUTLOOK

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Conclusion and outlook

Global population is older than ever, and it is getting even older. Technology and services that do not attend the needs of this population are alienating an entire user base and losing a significant market opportunity. Apart from creating awareness for banking services to include the elderly in the service design processes based on data and trends, this study aims to share best practices, insights and guidelines so you can start creating innovative projects to include senior users.

As a final highlight, it is important for any institution focused on this group to understand two important approaches on this:

1 The Human element:

From Stanford case to the opinion of the experts presented here, what we need to change is the culture of ageing. Connecting through empathy will lead us to understand the needs of the elderly. Any design process, from services to apps, should consider including their perspective and their feedback during validation.

2 The Interface element:

The UX Design Agency and the Bank4Elder presented relevant findings on how understanding interface elements such as font sizes, colours, contrasts, icons and feedback on each action make the senior user digital experience better.

A non-holistic design is excluding a whole section of our population. Just like any other group, the elderly requires experiences that make the use of technology a win-win-situation for users and institutions.

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[Principles for Elderly User Experience Design](#)



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