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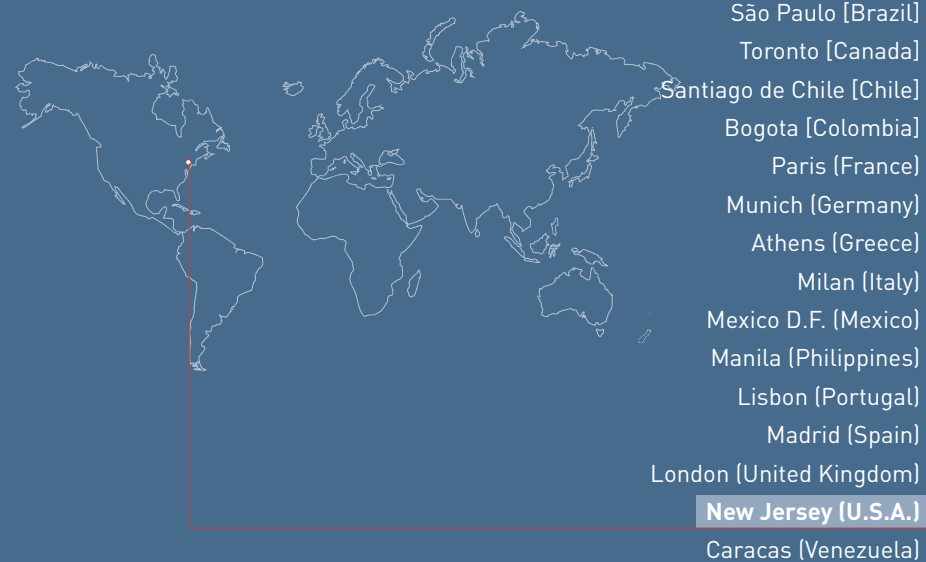
Crop insurance in the U.S.A. (B.S. Wilner and F. Schnapp)

Phone evolution and revolution (E. Cerdeño)

José M<sup>a</sup> Elguero: "Marsh: beyond insurance brokerage"

Rafael Matesanz: "ONT, transplanting life"





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## trébol

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## summary

**03**  
 editorial

**04**  
**The U.S. Federal Crop Insurance Program in 2012 and Beyond**

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**16**  
**Phone evolution and revolution**

Esther Cerdeño  
 IT Deputy Manager  
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**30**  
 interview:  
**José María Elguero**  
 Director of the Marsh Spain Research Department  
 Madrid - Spain

**38**  
 interview:  
**Dr. Rafael Matesanz**  
 Director of the National Transplant Organisation (ONT)  
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**47**  
 agenda



## editorial

Throughout history, droughts have caused food crises, major social upheavals and wars. Ensuring food availability is a priority for any world leader. In countries like the US, Spain, Turkey and China, the government has strongly supported the development of agricultural insurance schemes to confront this challenge. Climatically, 2012 was a difficult year in the US, as is recounted for Trébol by Benjamin S. Wilder of Grant Thornton and Frank Schnapp of the National Crop Insurance Services, who in addition to reviewing the fundamentals of these schemes, also demonstrate their robust continuity.

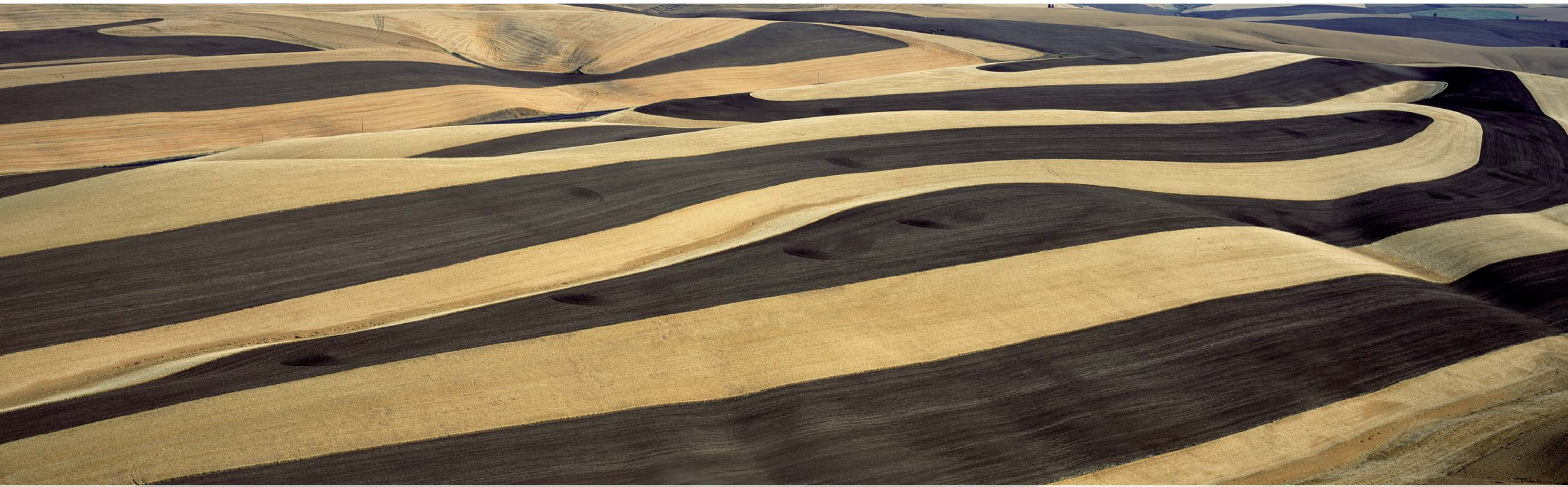
Communication is an intrinsic element of social life. People have always strived to find different and efficient ways to communicate, which is why telephone communication is one of the most significant achievements of the modern era. Nobody could have imagined 135 years ago, when the first telephone device was invented, that it would become part of our everyday working and social lives. Esther Cerdeño, IT Deputy Manager at MAPFRE RE, focuses on the dramatic progress accomplished in communication technologies leading up to mobile devices, and on the new unknown challenges that lie ahead.

José María Elguero, director of Studies and effectively head of the think tank MARSH Spain, believes the current crisis is an opportunity to explore new ways of thinking and working out strategies. In addition to highlighting growth in civil liability insurance for D&O (Directors and Officers) in Spain, Mr Elguero touches on a few of the issues reviewed in his report "Insurance Agents and their Civil Liability", which was sponsored by FUNDACIÓN MAPFRE. According to the report, training, specialisation and new technologies will continue to be the keys to professional excellence for agents.

The last interview in Trébol is with the director of the Spanish Transplant Organisation, Dr Rafael Matesanz. In the interview, Dr Matesanz relates an inspiring success story that goes back to 1989, when Spain's very own national transplant system, run by the public health service, was introduced. The model, which combines efficient logistics, highly specialised cross-disciplinary teams and controlled expenditure, and is bolstered by the generosity of the people, has propelled Spain to the top of global transplant statistics. In a world that is virtually borderless where transplants are concerned, it is heart-warming to imagine the number of people who live around us thanks to the donations of others.



# The U.S. Federal Crop Insurance Program in 2012 and Beyond



Crop fields in Washington State, U.S.A.

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## A Brief History of Crop Insurance in the United States

Insurance protection against damage to growing crops has been available to farmers in the United States since the late 1800's. Crop-Hail insurance provides protection against damages caused by hail, fire, and lightning, as well as transit of harvested crops to storage. Additional perils such as wind are insured on an optional basis. Private sector insurers at one time had offered multiple peril crop insurance, but the effort floundered due to the difficulty in setting adequate rates to cover losses resulting from widespread crop disasters.

With the advent of the Great Depression, in combination with severe losses to agriculture during the Dust Bowl<sup>1</sup> era of the 1930's, Congress authorized the Federal Government to offer crop insurance directly to farmers. Other farm support programs were introduced in the same period with the intent to limit production, raise commodity prices, and stabilize farm income. The crop insurance program proved to be relatively unsuccessful in the ensuing decades, with low participation leading to ongoing political pressure for government-funded disaster assistance programs. By 1980, it had become apparent that reforms were necessary to increase farmer participation,

<sup>1</sup> Dust Bowl: Environmental disaster in U.S.A. caused by 1932-1939 drought that affected plains and grasslands ranging from the Gulf of Mexico to Canada. The dust bowl effect was compounded by years of land management practices that increased their susceptibility to wind action, since, lacking moisture, was lifted by the wind in great clouds of sand and dust so thick they hid the sun. The Dust Bowl multiplied the effects of the Great Depression in the region and caused the largest population displacement occurred in a short space of time in U.S. history.

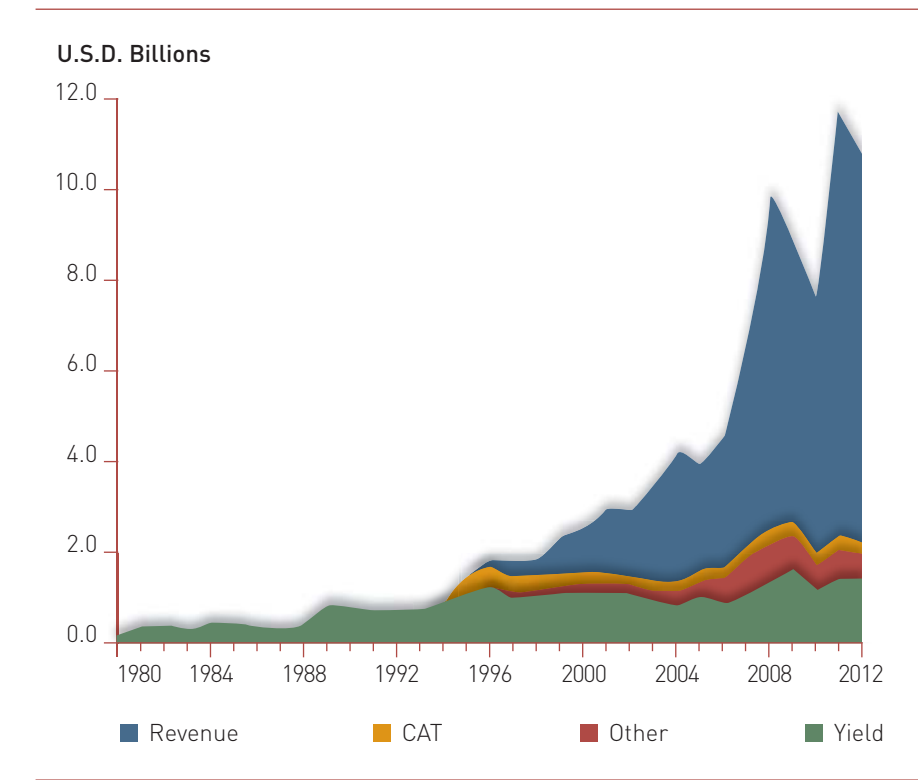


Private sector insurers at one time had offered multiple peril crop insurance, but the effort floundered due to the difficulty in setting adequate rates to cover losses resulting from widespread crop disasters



Figure 1: MPCPI Premium by Type of Plan

Source: NCIS



provide a better spread of risk, reduce costs, and limit demand for free disaster assistance. To help achieving those objectives, private sector insurers were allowed to market and service the Federal crop insurance program in exchange for an opportunity to earn a profit through bearing a portion of the risk, through a program called Multi-Peril Crop Insurance (MPCI). Congress simultaneously introduced premium subsidies to make the program more affordable to farmers. These changes led to a rapid increase in insured acreage from 26 million acres in 1980 to more than 100 million acres in 1990. Despite this success, the program still fell short of its participation objective and failed to eliminate calls for disaster assistance. In response, Congress enacted the Federal Crop Insurance Reform Act of 1994. A key feature of this legislation was a requirement for farmers to purchase crop insurance in order to retain eligibility for other government farm programs. Premium subsidies were increased substantially to encourage greater participation, and a minimal level of free catastrophic risk protection, known as “CAT” coverage, was made available for insured crops. Free catastrophic risk

protection was also made available for crops not insurable under the Federal crop insurance program. Following these changes, the insured area surged from 100 million acres in 1994 to 220 million acres in 1995.

In 1995, Congress removed the linkage between crop insurance and other farm programs. Insured acreage declined over the next several years, not exceeding the 1995 level until 2004. At the same time, insured liability and premiums grew substantially following the introduction of revenue protection insurance in 1996, which quickly became the preferred form of risk protection. The crop insurance program has continued to expand in recent years and currently provides protection for more than 100 crops, as well as cattle, swine, clams, and oysters.

### Types of MPCPI protection

The products offered through the Federal Crop Insurance Program have continued to expand and evolve over time, including the

Yield Protection (YP) program, introduced in 2011. YP is a type of individualized protection that pays the farmer for his or her production shortfall whenever the actual production on an insured unit of land falls below the farmer’s guarantee. Coverage is provided against natural causes of loss such as drought, excessive moisture, hail, wind, frost, insect damage, and disease. Farmers are required to follow good farming practices in order to reduce the risk of moral hazard. The guarantee is based on the farmer’s own average historical yield, known as the APH, for the intended farming practice on the insured land. More specifically, the guarantee is the product of the farmer’s APH, the number of insured acres, and the selected coverage level, which can range from 50 percent to as much as 85 percent in increments of 5 points. Since the policy pays claims only if actual production falls below the guarantee, the first portion of any production shortfall represents the farmer’s deductible. The price used to compensate the production shortfall is established in advance of the planting period based on daily settlement prices for futures contracts

offered on the Chicago Board of Trade or other commodity exchanges.

Revenue Protection is similar to Yield Protection, with the production guarantee again being based on the farmer’s own historical yields. The difference is that the value of the harvested crop is determined by multiplying actual production by the price at harvest rather than the price established prior to planting. This serves to protect the farmer against the additional risk of price decline between planting and harvest. The most commonly purchased type of Revenue Protection also provides protection against price increases. The purpose for this coverage is to protect the farmer in situations where the crop is sold prior to harvest. If the crop were to fail, the farmer would still be obligated to deliver an equivalent amount of production to the buyer or to compensate the buyer for the cost of purchasing the crop on the open market. If crop prices have increased over the year, the cost of purchasing the crop on the open market could exceed the amount the farmer received from the earlier sale of the crop.

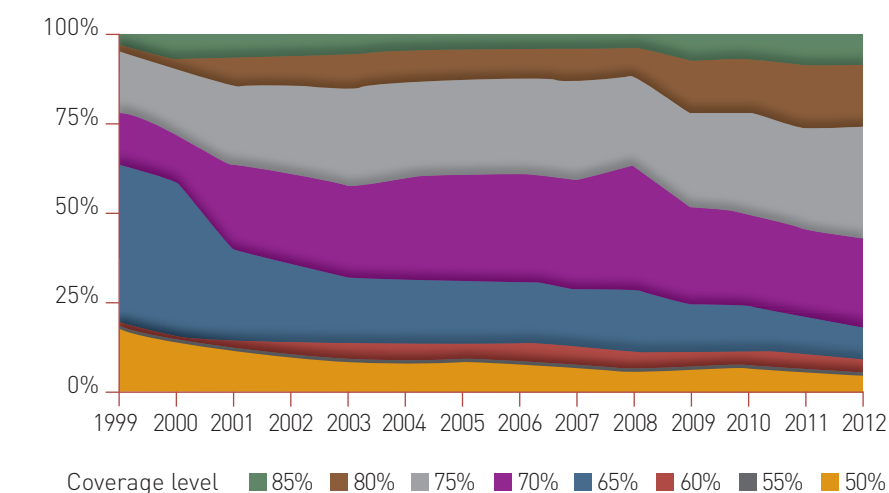
**RMA develops policy language for the various insurance products, establishes the rates, and develops the loss adjustment procedures that companies use to settle claims. Rates are intended to cover the risk portion of the premium only and exclude any provision for expense or profit**





Vineyards in Napa Valley, California, U.S.A.

**Figure 2: Percent of premium by coverage level and year**  
Yield and revenue plans combined  
Source: NCIS



By reducing marketing risk, this form of Revenue Protection allows producers to better manage their marketing activities in order to maximize farm revenue.

Several additional types of protection are available through the Federal Crop Insurance Program. Group Risk Protection and Group Risk Income Protection are comparable to Yield Protection and Revenue Protection except that the guarantee and the actual production in a year are based on county data rather than an individual farmer's own experience. These plans tend to be purchased primarily in regions where farmer yields are highly correlated with county yields. The Adjusted Gross Revenue and Adjusted Gross Revenue-Lite plans of insurance establish the guarantee based on the farmer's five year average historical revenue as reported on his Federal tax forms, with the indemnity based on the difference between the guarantee and the farmer's current year revenue. These plans are available for farmers who want to insure a variety of crops along with farm animals and animal products, some of which may not be insurable under other forms of protection. The Rainfall and Vegetation Index plans of insurance provide indirect protection for animal forage by compensating the farmer for inadequate rainfall or insufficient green vegetation within a predetermined region

through the use of local weather station or satellite data. Other plans insure the trees on which citrus and similar crops are grown, separately from insuring the crop itself.

### Role of the U.S. Government

The Risk Management Agency (RMA) of the U.S. Department of Agriculture has regulatory authority over the MPCI program. In its role as regulator, RMA has several distinct responsibilities. To meet its public policy responsibilities, RMA develops policy language for the various insurance products, establishes the rates, and develops the loss adjustment procedures that companies use to settle claims. Rates are intended to cover the risk portion of the premium only and exclude any provision for expense or profit.

Second, RMA has the responsibility for providing subsidies to make the program more affordable to producers. This is accomplished through a second entity, the Federal Crop Insurance Corporation (FCIC), which has the legal authority to obtain funds as needed from the U.S. Treasury. Premium subsidies are administered as a discount to the published rates rather than as a direct payment to farmers. Since rates exclude any loading for expense, insurer expenses are compensated through a separate payment,

known as the Administrative and Operating (A&O) reimbursement. In recent years, the A&O reimbursement has fallen well below actual industry expenses.

A third RMA responsibility is to provide oversight of the seventeen Approved Insurance Providers (AIPs) that currently deliver the program. RMA monitors the AIPs to ensure that they have sufficient resources to meet their financial obligations, as well as to ensure compliance with all relevant laws, regulations, and procedures. Companies are required to use the RMA policies, rates, and procedures without modification, and are obligated to sell policies to any eligible farmer regardless of risk. RMA preempts all direct state regulation of the Federal Crop Insurance Program, while the Insurance Departments of each State retain responsibility for solvency and financial regulation of the AIPs.

The final RMA responsibility is to function in the role of a reinsurer. This serves two distinct purposes. First, it enables AIPs to cede most of the risk on those policies that AIPs are obligated to sell but that fail to meet AIP underwriting standards or are viewed as being unprofitable or commercially uninsurable. In the absence of this protection, universal private sector participation in the program would be infeasible. Second, it provides protection against widespread catastrophic

losses that could exceed the financial capacity of an individual company. AIPs can also choose to purchase additional reinsurance protection in the commercial markets.

### Operation of the program (SRA)

Each AIP signs a financial arrangement, known as the Standard Reinsurance Agreement (SRA) that specifies the financial terms under which the company delivers the program to producers. The terms of the SRA are renegotiated between RMA and the AIPs every five years. The most recent SRA went into effect for the 2011 reinsurance year. The government assists the farmers and the insurance industry through three types of financial support.

First, the government acts as a reinsurer of some of the risk insurance companies assume when they write MPCI insurance. In particular, the SRA provides three layers of government-provided reinsurance.

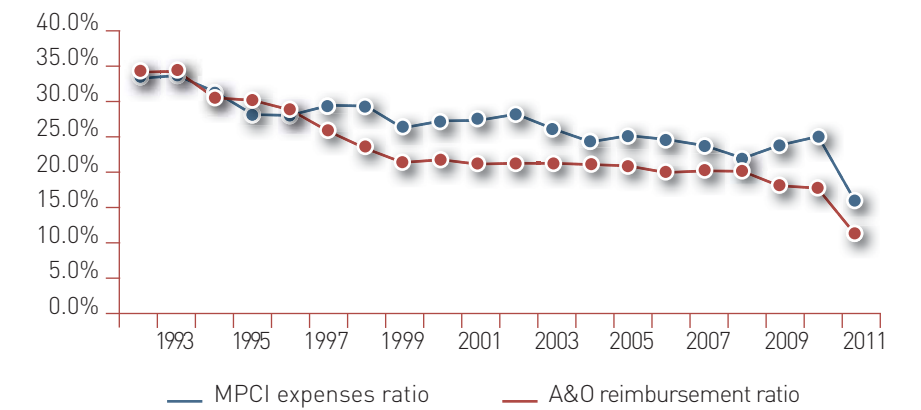
The initial layer consists of pro rata coverage. Shortly after it issues a policy, the AIP assigns the policy to either the Commercial Fund (CF) or the Assigned Risk (AR) Fund. Each state has its own CF and AR fund. Companies use the AR fund to place the unprofitable or commercially uninsurable business; CF is for the more acceptable risks. Companies retain





**Figure 3: Evolution of the MPCl Expense Ratio and A&O Reimbursement Ratio (1992-2011)**

Source: Grant Thornton database



**Since rates exclude any loading for expense, insurer expenses are compensated through a separate payment, known as the Administrative and Operating (A&O) reimbursement. In recent years, the A&O reimbursement has fallen well below actual industry expenses**

20% of the liability, premium and indemnity in the AR fund. Companies decide what percentage they want to retain of the liability, premium and indemnity in the CF - and they can make separate decision for each state. In general, AIPs retain almost 100% of the business placed in the CF.

The second layer consists of government-provided non-proportional coverage. Companies pay no premium for this reinsurance layer - retained premium is identical to the retained premium after the first layer of pro rata reinsurance. In place of premium, FCIC takes a share of the underwriting gains to help pay for the reinsurance of any underwriting losses. For a given state and fund, FCIC determines the company's retained underwriting gain or loss after the first layer of pro rata reinsurance. This amount is then subdivided into the underwriting gain or loss falling into each of seven loss ratio

ranges (0-50%, 50-65%, 65-100%, 100-160%, 160-220%, 220-500%, and > 500%). A different sharing percentage applies to each layer. For the CF, the sharing percentage differs for the five Corn Belt states of Illinois, Indiana, Iowa, Minnesota, and Nebraska as compared to all remaining states. This distinction, which was established in the 2011 SRA, allows FCIC to retain a larger share of the underwriting gain in these five states.

The final layer of government-provided reinsurance is known as quota share. This takes a fixed percentage of the liability, premium, and net underwriting gain remaining after the second reinsurance layer. This is similar to the first layer of pro rata reinsurance but, unlike the first layer, provides no benefit to the AIPs or the program. This can be interpreted as a mechanism to enable FCIC to recapture a portion of the industry underwriting gains.

Second, not only does the government reinsure some of the industry's risk, but it keeps premiums low by assuming all industry operating costs. In traditional insurance, premiums are meant to cover the claims the industry paid as well as the costs insurance companies incur to deliver insurance (i.e., overhead, loss adjustment, and agent commissions). With MPCl, the premiums only cover the claims paid; as discussed above, the government separately pays the AIPs for what it believes is the cost of delivering insurance. However, in practice, the government payments do not cover all of these costs. The chart 3 shows industry expenses and A&O reimbursements by year, both expressed as a percent of gross premium. The cost effectiveness of the industry has improved remarkably over time as the program has grown, despite increasing governmental requirements and

continual changes in the program. Over the same period, the A&O reimbursement has declined to an even greater extent, with total payments in the latest year of 11.5% in comparison to actual expenses of 16.2%.

Third, the government subsidizes the premiums farmers pay. These subsidies began with the 1980 Farm Act that instituted the modern crop insurance program. Initially, subsidies were set at 30% of a farmer's premium for a policy at the 65% coverage level. Through subsequent legislation, the average subsidy has risen over time to its current level of 62% of a farmer's premium.

### Industry Participants

As discussed above, insurance carriers must be authorized by RMA to write MPCl policies. As shown in chart 4, while the number of approved insurance carriers increased in the 2013 calendar year, this number has fallen since 2000.

In addition to the companies that actually write the insurance contracts with farmers, reinsurance companies participate in the crop insurance industry by reinsuring a portion of the risk. These reinsurers do not need to be government approved.

**The cost effectiveness of the industry has improved remarkably over time as the program has grown, despite increasing governmental requirements and continual changes in the program. Over the same period, the A&O reimbursement has declined to an even greater extent, with total payments in the latest year of 11.5% in comparison to actual expenses of 16.2%**



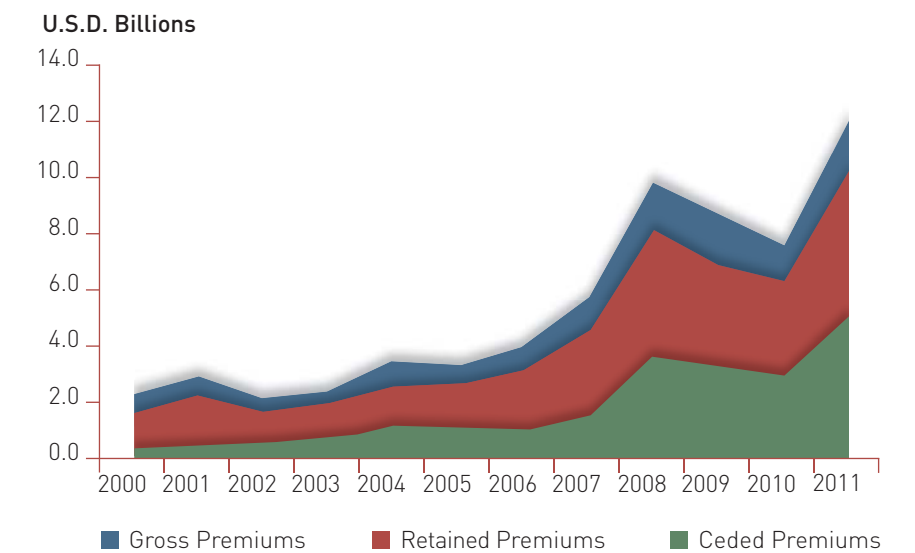
Without the current economic support the government provides to farmers and the crop insurance industry, it is possible that the successes achieved by the program in delivering effective risk management solutions to U.S. farmers could be impacted



Cotton crop in the southern of the U.S.A

Figure 5: Evolution of Gross, Retained and Ceded Premiums MPCl (2000-2011)

Source: Grant Thornton database



In chart 5, Gross Premiums represent the full amount of premiums companies charge farmers. Roughly 40 percent of the Gross Premium is currently paid by farmers and the remainder is the government premium subsidy. Retained Premiums are

the premiums retained by the insurance companies after government-provided reinsurance. Ceded Premiums are the amount of Retained Premiums that the insurance companies reinsure in the commercial reinsurance market.

Chart 5 shows that commercial reinsurers' participation in crop insurance has increased dramatically over the past decade.

In July, the AIP determines the premium for the policy based on the farmer's planted acreage and pays agent commissions for the insurance policies they sold. The AIP would also bill the farmer at this time.

Later in July and August, the farmer pays the farmer's portion of the premium required under the policy to the AIP. The AIP immediately forwards the entire premium to FCIC. FCIC makes an accounting entry to credit the government premium subsidy to the policy.

In October, FCIC pays the A&O reimbursement to the AIPs to compensate them for their delivery costs. In addition to these being less than the true costs, as discussed above, these payments are received after the AIPs pay their agents.

Beginning in July and extending through harvest and into the following year, the AIPs settle claims for farmers who are owed money under their policies. Since the AIPs did not retain the premiums, the funds needed to pay each claim are transferred from FCIC to an escrow account maintained by each company.

If the AIP uses all of the premium that FCIC has credited to its account to settle

claims, it must deposit additional funds into the escrow account to cover the cost of all subsequent claims. In effect, AIPs are obligated to pay FCIC for any underwriting loss as soon as it occurs.

If the AIP earns an underwriting gain, FCIC pays the gain to the AIP in October of the following year. Consequently, an AIP must wait an entire year before it receives the underwriting gain it earned in that growing season.

Some agencies that oversee items like Social Security and government debt payments were exempted from cuts. Payments to FCIC, which oversees crop insurance, were also exempted

### Recent Issues

There are two major issues that are currently affecting the crop insurance industry: recent droughts and proposed governmental legislative changes.

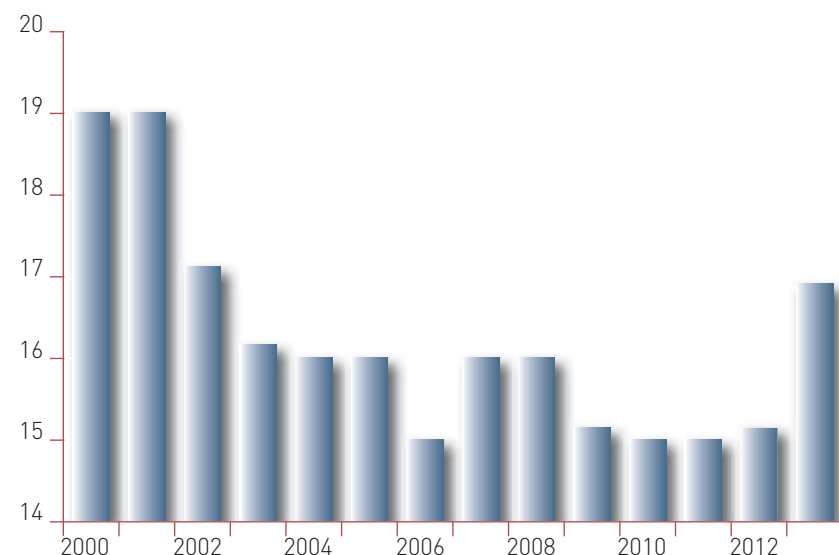
The United States experienced severe droughts in both 2011 and 2012. The most recent year with a drought of similar magnitude occurred in 1988. As shown in chart 6 below, different parts of the country were affected by the drought in each year.

Consequently, different crops were affected in each year. The 2011 drought was primarily

Figure 4: Number of insurance companies writing MPCl policies

Source: Grant Thornton database

APIs: Authorized insurance providers



### Timeline of Payments

Due to government involvement in the program, payments are made differently in MPCl than in other type of insurance. In particular, cash flows to participating insurance companies are substantially delayed. To illustrate, we demonstrate the timeline that exists on crops that have a standard Spring planting season and Fall harvest season. Crops with different planting and harvesting seasons would be adjusted accordingly.

In March, the farmer purchases an insurance policy from an agent of one of the seventeen AIPs. The farmer pays no policy premium at this time.





Soya harvest

centered in Texas and Oklahoma, causing a decrease in cotton production. The 2012 drought involved the Upper Midwest, which grows primarily corn and soybeans. Interestingly, wheat, which is also grown in the Upper Midwest, was not greatly affected in 2012 because wheat is planted in this region in autumn and harvested in late spring. The 2012 drought rapidly increased in severity from June to July and persisted into August, after most wheat had been harvested.

The risk associated with insuring crops can be demonstrated by the fact that, even though it was one of the driest and most unfavorable growing conditions in decades, 2012 was anticipated to be a banner year with expectations of record or near-record production. For example, in the first weekly rating of the corn crop on May 20<sup>th</sup>, over 75 percent was rated as good to excellent, while only 3 percent was in the poor or very poor category. By September 30, only 25 percent of the crop was rated good to excellent with 50 percent rated poor or very poor. Sharp declines in soybean ratings also occurred, with only 35 percent of the crop rated good to excellent as of October 7<sup>th</sup>, as compared with 65 percent in the year's initial weekly soybean rating on June 3<sup>rd</sup>.

As a result of the recent droughts, farmers' behaviour could change in 2013 and beyond. For example, a greater use of drought resistant hybrids could occur in 2013. Also, farmers might plant more soybeans as opposed to corn since soybeans is able to produce a crop with less moisture.

In addition to the recent droughts, the crop insurance industry also needs to be concerned about potential legislation affecting the crop insurance program. The Farm Bill is a comprehensive piece of legislation that covers most government policies related to agriculture in the US. The 2008 Farm Bill expired on December 31, 2012. When a settlement was reached to the so-called Fiscal Cliff crisis, the 2008 Farm Bill was not renegotiated, but rather was temporarily extended until September 30, 2013. Unless another extension is granted, a new Farm Bill must be passed by that

time. Failure to pass a new Farm Bill would result in Federal farm policy reverting to the provisions of permanent law enacted in the 1930s and 1940s.

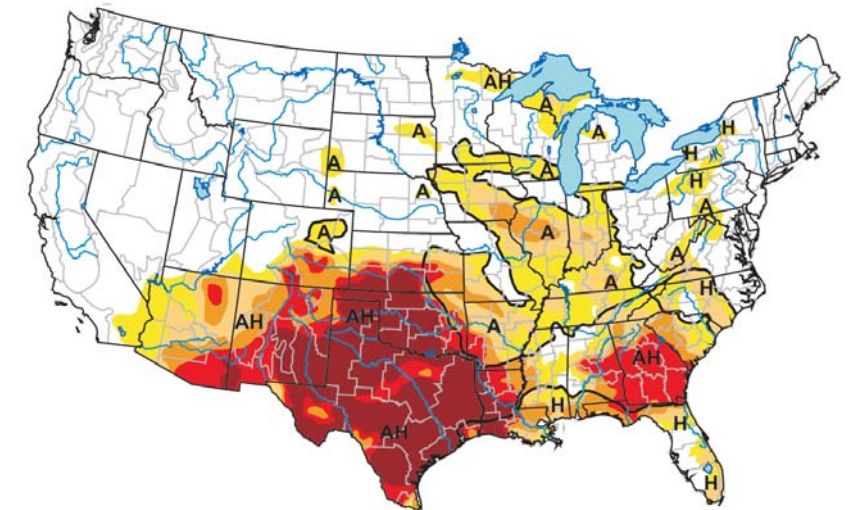
It is unclear how the government will handle crop insurance in the new Farm Bill. Some proposals have called for an across the board reduction in the premium subsidies the government provides; others only cut the subsidies for "large" farmers; some have no cuts at all. The U.S. Government instituted a sequester on March 1, 2013, which reduced spending by almost all government agencies. Some agencies that oversee items like Social Security and government debt payments were exempted from cuts. Payments to FCIC, which oversees crop insurance, were also exempted.

Without the current economic support the government provides to farmers and the crop insurance industry, it is possible that the successes achieved by the program in delivering effective risk management solutions to U.S. farmers could be impacted. Currently, 80 to 85% of eligible U.S. crops are insured. One of the primary advantages of the current crop insurance program over other types of farm support is that farmers contribute substantial sums as premium in order to obtain insurance protection designed around their individual needs. Other farm support programs are funded almost entirely by the Federal Government with little or no financial contribution from farmers. Agricultural related disaster aid cost the U.S. government approximately \$45 billion between 1989 and 2001. However, thanks to the growth and success of the crop insurance program, there were no calls for Federal disaster aid in either 2011 or 2012 despite the severity of droughts in each year. The crop insurance industry delivered on its promises to protect farmers against drought and other perils, and delivered those benefits rapidly, accurately, and at relatively little cost to the U.S. taxpayer. The U.S. crop insurance program has demonstrated that farmers are willing to commit their own money to obtain a program that truly meets their needs both today and in the years to come.

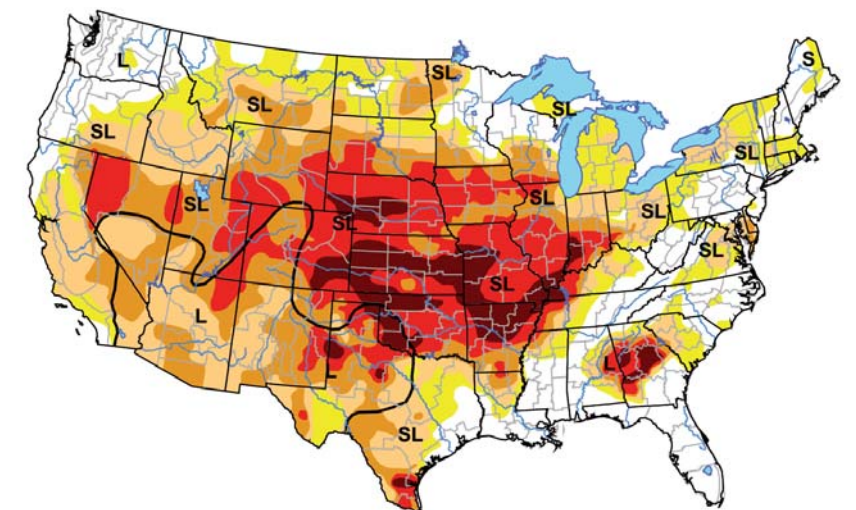
**Figure 6: Several areas from the U.S.A. affected by the drought in 2011 and 2012**

Source: <http://droughtmonitor.unl.edu/>

U.S. Drought Monitor, August 30, 2011



U.S. Drought Monitor, August 28, 2012



**Intensity**

- Abnormally dry
- Drought moderate
- Drought severe
- Drought extreme
- Drought exceptional

**Types of impact**

- S: Short Term, typically < 6 months (agriculture, grasslands)
- L: Long Term, typically > 6 months (hydrology, ecology)
- A: Agricultural drought
- H: Hydrological drought



# Phone evolution and revolution



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Throughout its history, telephony has changed, new ways of communication have been devised, new models have been launched to meet the constantly changing demands of society, and at times, creating needs inconceivable up until then.

The first telephone device was invented at the end of the 19<sup>th</sup> century. No one could have imagined that phones would evolve so remarkably and have such wide-reaching effects 135 years later.

Telephone communication is part of our daily life regardless of age, sex or social status. Land or cable lines have been further supplemented by mobile phones, which are beginning to be considered essential parts of personal and business life.

Particularly striking is the rapid expansion of mobile phones in emerging economies and even in developing countries. In China, India and Brazil, mobile phone acceptance has been demonstrated beyond all doubt. Table 1 shows an increase of about 900% between 2000 and 2011.

**The first telephone device was invented at the end of the 19<sup>th</sup> century. No one could have imagined that phones would evolve so remarkably and have such wide-reaching effects 135 years later**



**The real revolution got under way when fourth generation (4G) devices appeared with faster voice and data transmission speeds, to become vital social and leisure attributes**

For this phenomenon to take place, not only was it necessary to create a device capable of performing multiple applications, it also required the development of communication lines. There has been a progression from the initial use of cable line, through fibre optics and satellite communication, to broadband (Internet data transmission with a download speed of 5.76 Mb per second). This has expanded throughout the world, and has enabled communication without the need of cabling infrastructure, thus avoiding the high costs in countries with fewer resources.

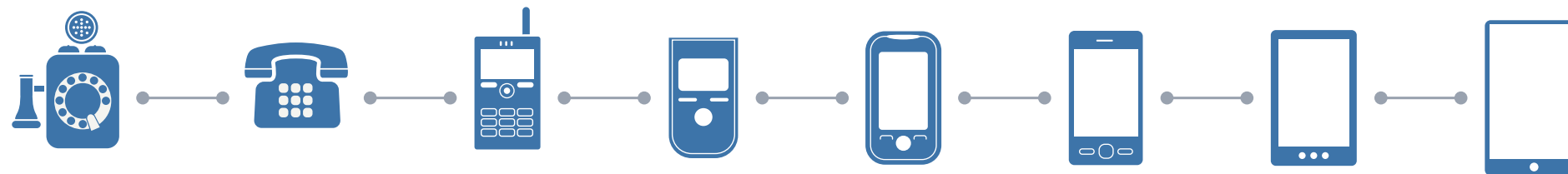
### The evolution of mobile phones

Landlines are widespread throughout the world, but with a clear downward trend. The first mobile phones appeared in the late 1940s, after the Second World War. They were very expensive, heavy and large, so they were generally used inside vehicles and only by a limited number of people.

In 1982 Bell Laboratories in the United States created the device now known as the first-generation mobile phone (1G, analog voice)

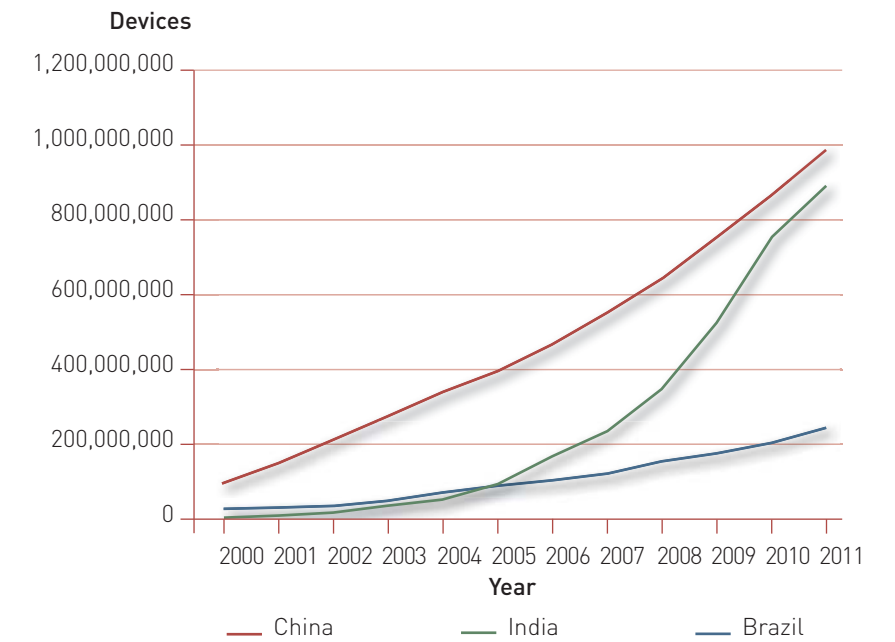
which relied on AMPS (Advanced Mobile Phone System) technology. They also reached England and Japan, where they were known as TACS (Total Access Communications System) and MCS-L1, respectively.

Second generation phones (2G) appeared in 1990. They were smaller, lighter and cheaper, and based on GSM (Global System for Mobile Communications) providing digital cellular communication, which improved the quality and security of voice transmission. This technology allowed the transmission of several



**Figure 1: Evolution of mobile phones in China, India and Brazil**

Source: <http://www.itu.int/ict/statistics>



**Table 1: Number of mobile phones in use in Brazil, China and India 2000-2011**

Source: <http://www.itu.int/ict/statistics>

|               | 2000       | 2001        | 2002        | 2009        | 2010        | 2011        | Δ 2000-2011 |
|---------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Brazil</b> | 23,188,171 | 28,745,769  | 34,880,964  | 169,385,584 | 196,929,978 | 244,357,507 | 953.80%     |
| <b>China</b>  | 85,260,000 | 144,820,000 | 206,005,000 | 747,214,000 | 859,003,000 | 986,253,000 | 1,056.76%   |
| <b>India</b>  | 3,577,095  | 6,540,000   | 13,000,000  | 525,090,000 | 752,190,000 | 893,862,478 | 24,888.50%  |

Forty years ago, Martin Cooper, executive from Motorola made the first call from a mobile. He made it at the Sixth Avenue, New York, and was addressed to his major rival in the sector, Joel Engel from Bell Labs, AT&T.

Cooper said: Do you know where am I calling you from?

The call was made though a prototype of Motorola. Its weight was of 794 grammes and its size, 33 x 45 x 8.9 centimeters. It needed ten hours to be charged and its battery only lasted for half an hour. Its current price would be of 7,200 euros.



Martin Cooper's current picture, holding the device from which the first call was made





conversations simultaneously over a single channel, which greatly reduced the price in the contract of lines, and promoted their integration into the business world.

From that moment on, and following the expansion of computer use and the Internet, workstations connected to a local network were replaced with desktops and laptops with LAN (Local Area Network) and WAN (Wide Area Network) connections. Society started to address the need for data transmission (Multimedia). And so began what is known as the third generation (3G) and the development of UMTS (Universal Mobile Telecommunications System) technology. Mobile phones began to incorporate Internet connection, allowing the transmission of files. Among the functions or services offered, photo and video cameras and games gained great importance, adapting mobiles to the home and business environments.

This is when the real revolution got under way. Fourth generation (4G) devices appeared with faster voice and data transmission speeds, and they became vital social and leisure attributes. Young people aged between 18 and 30

constitute the social group in which mobile phone use has expanded most rapidly, although the age at which the devices are acquired has been falling steadily and is now about 12. Teenagers are the driving force behind mobiles given the importance for them of being constantly in touch, with access to various social networks like Twitter, Facebook and the Spanish Tuenti. It is common to see groups of friends gathered at the same table sharing a meal, communicating with others located hundreds or thousands of miles away through social networks or making a purchase online. This form of social interaction is no longer considered extraordinary.

Decisions can be made at business meetings based on online data derived from systems located in other offices by simply accessing the Internet via Smartphones or tablets, using secure VPN (Virtual Private Network)

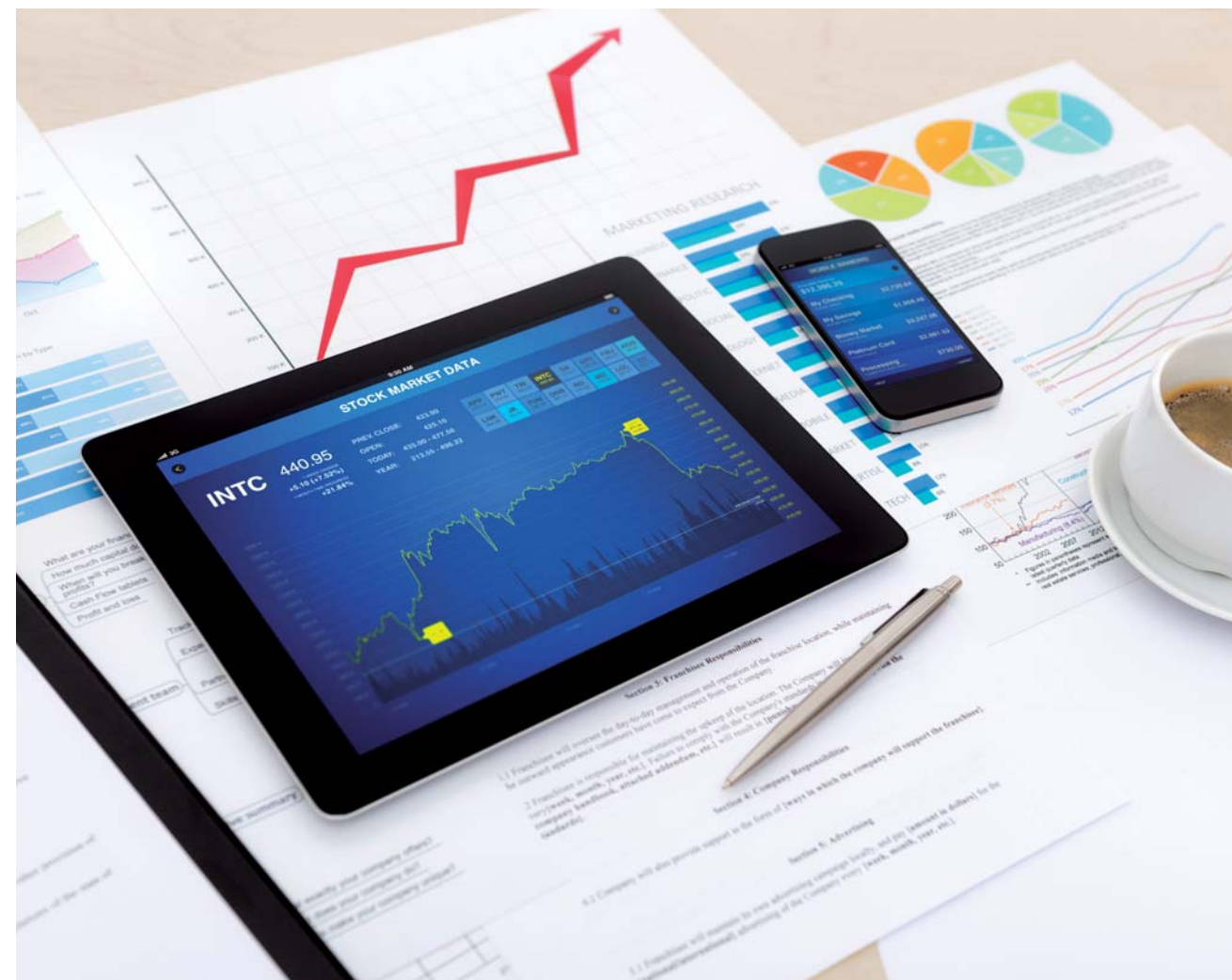
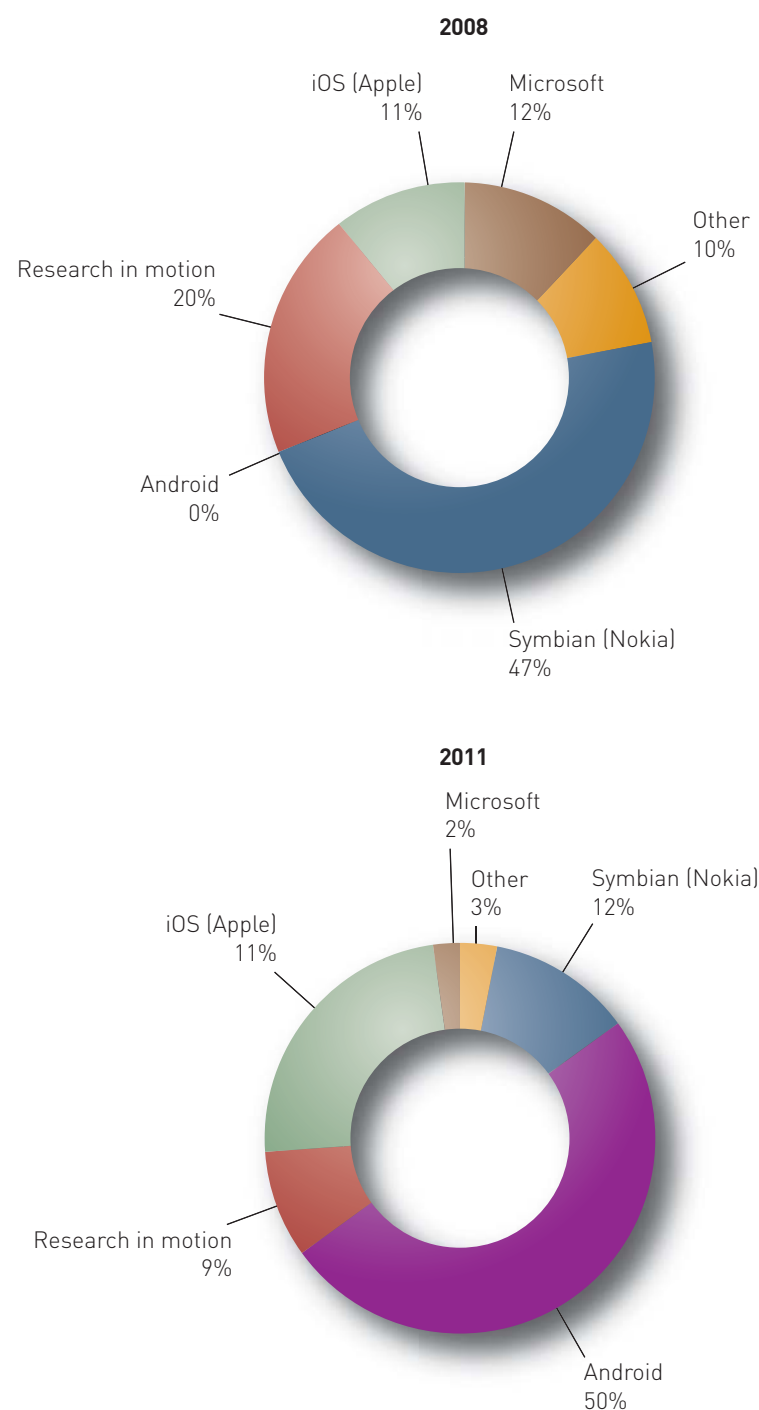
connections. Users can exchange files, download videos, remotely update data or establish video conferences with others in their organization.

**Today servers are available with high storage capacity, accessible via the internet, and without the users being aware of the changed storage location of their data**

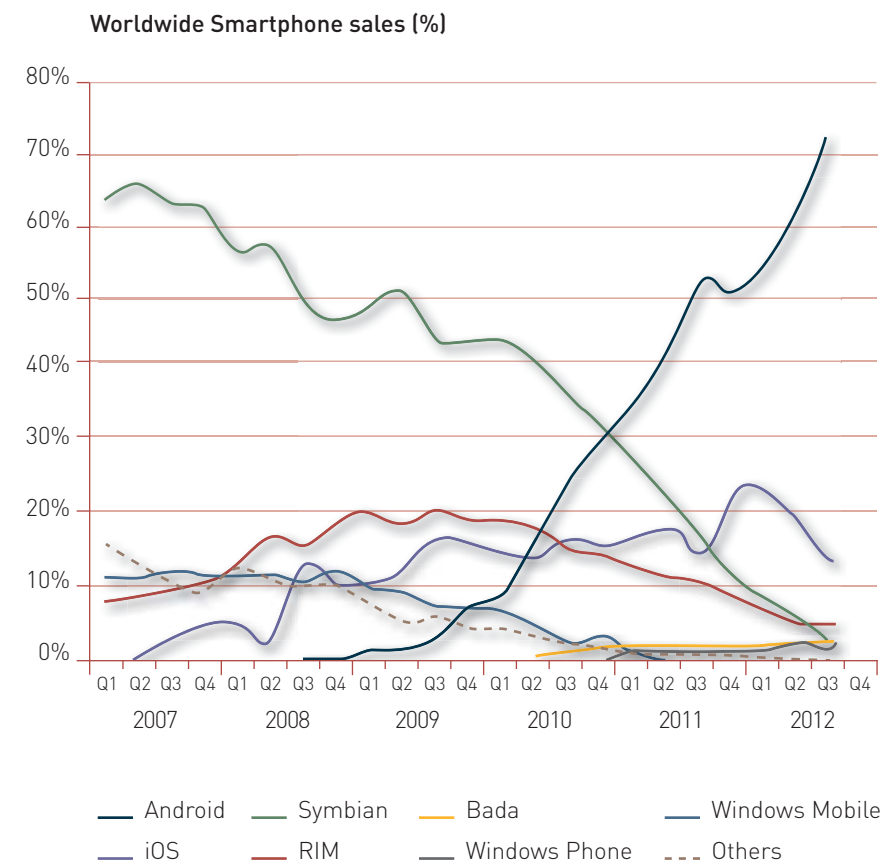
### The concept of mobility today

The current tendency is clearly towards the integration of telephony with a large part of the services and applications that can be obtained using a computer. The challenge that various international technology companies are currently facing is the integration of a telephone, camera and laptop computer in the same device and with access to numerous applications (videoconferencing, ebooks, television channels and social networks). Out in front are Apple and Samsung with their current Tablets and Smartphones. Close behind is Microsoft with its launch of Surface, a multi-user and multi-touch

**Figure 2: Comparison of the distribution of mobile operating systems 2008-2011**  
Source: IC4D 2012 report published at <http://web.worldbank.org>



**Figure 3: Sales of mobile devices by Operating System**  
Source: Gartner 2012.12.07







system capable of identifying various objects on the screen, and which can incorporate a physically independent keyboard.

According to report IC4D 2012 (Information and Communications for Development) published by the World Bank, a change in the market for both operating systems and mobile devices came about in 2011. While Nokia held 47% of the market in 2008, Google's 'Android' operating system accounted for 50% by 2011 and continued to grow during 2012, gaining market shares from Apple's iOS operating system.

"Cloud Computing" has emerged to complement the world of services and applications. Some years ago there was talk of centralising servers at a global level to provide access for thousands of users situated throughout the world. Today servers are available with high storage capacity, accessible via the Internet, and without the users being aware of the changed storage location of their data.

### Application services for mobiles

The applications (apps) market started up with Apple's iOS in 2010. With the introduction of the latest version of Google's

**Table 2: General characteristics of mobile applications**

|   |
|---|
| <b>Target public</b><br>Specific or segmented.  |
| <b>Real-time iteration</b><br>Immediate response when it is being used.   |
| <b>Whether it is paid for or free</b><br>Frequently, reduced versions of applications are offered for free. If additional functionality is required, it will be necessary to purchase a paid-for version. |
| <b>Maintenance, future checks and updating</b><br>Responding to users when errors are detected or when improvements are planned.  |

**Table 3: Grouping of applications for tablets or smartphones**

Various sources

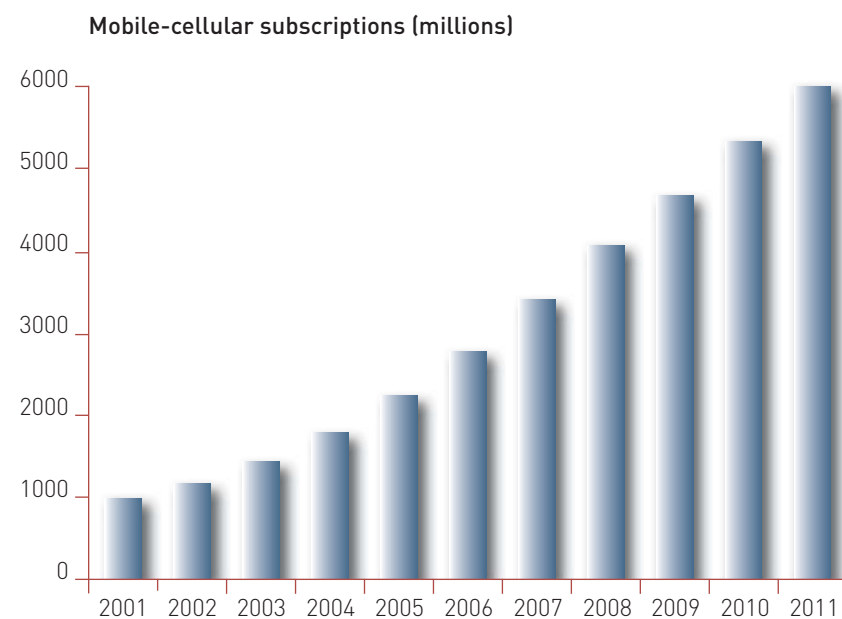
| Applications/Services | Description   |
|-----------------------|---|
| <b>General</b>        | Calculators, alarms, notepads, diaries.   |
| <b>Geolocation</b>    | Identification and position of devices (ships, stars). GPS techniques are used. There is a legal vacuum regarding individuals, so this service has not seen great development.  |
| <b>Sport</b>          | Allows real-time values associated with sporting activities (walking, running, swimming) to be recorded, such as heart rate. Recommends the training to be followed, routes and exercises.  |
| <b>Medicine</b>       | World maps with information on international epidemics in real time. Applications for the control of blood alcohol levels, telerehabilitation, stimulation for disabled people and control of medicines.  |
| <b>Leisure</b>        | Search engines for leisure and event venues, music players, videos, films, access to television and radio channels, games.  |
| <b>Business</b>       | Presentations and videoconferences, remote access to applications, online and offline statistics, maps of geographic results, market analysis, inventory access, presentation of products to clients, launches of marketing campaigns. Direct-to-bill mobile payments avoiding the use of credit cards for Internet transactions. |
| <b>Social</b>         | News of a general nature, magazines or newspapers, access to social networks (Twitter, Facebook), messaging (WhatsApp, Spotbros).   |
| <b>Cloud</b>          | Access to files stored in the cloud.  |
| <b>Education</b>      | Courses (languages, cooking, instruments), translators, books (novels, child education, media, university), virtual universities.   |





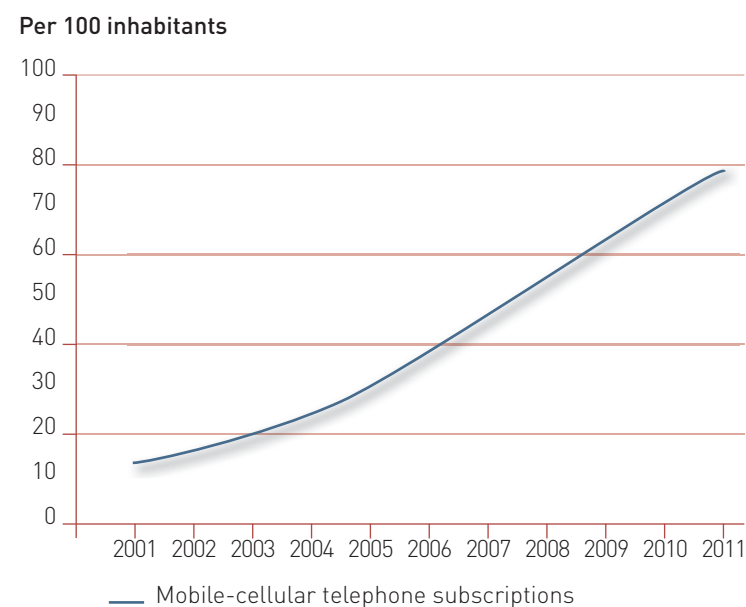
**Figure 4: Growth from 2001 to 2011 in the global number of mobile subscriptions**

Source: ITU World Telecommunication / ICT Indicators database



**Figure 5: Change in the number of mobile handsets per 100 inhabitants between 2001 and 2011**

Source: Global ICT developments, 2001-2011



Android, a situation of strong competition has been created between both systems.

Before an application is developed, the factors shown in Table 2 must be taken into account.

There are several applications in the market that can be either acquired free or paid for. Free or low-cost applications are frequently reduced versions with less functionality and are generally acquired through online stores associated with the system manufacturers.

### Data on the global use of mobile handsets

It is thought that in 2000 there were some 1,000 million mobile handsets. The World Bank report on mobile telephones calculates that a figure of 6,000 million contracts will shortly be reached.

According to a Global ITC DEVELOPMENT report published by the ITU, the number of mobile telephones in the world increased from 15.5 to approximately 87 per 100 inhabitants between 2001 and 2011 (Figure 5).

According to IDC (International Data Corporation), in its Worldwide Quarterly Smart Connected Device Tracker study, during the third quarter of 2012 the record for global sales of intelligent devices with Internet connection was beaten with an increase of 27% compared to the previous quarter. 717 million Smartphones with internet connection and more than 122 million tablets were sold between January and November 2012.

IAB Europe (European Digital and Interactive Marketing Association) carried out the "Mobile Media: consumer insights across Europe" study with data on Internet access through mobile devices in 19 European countries. It concluded that Spain has a high level of mobile internet penetration (26%), behind Finland and France and ahead of Germany. 12 million users (50% of whom are older than 35) use

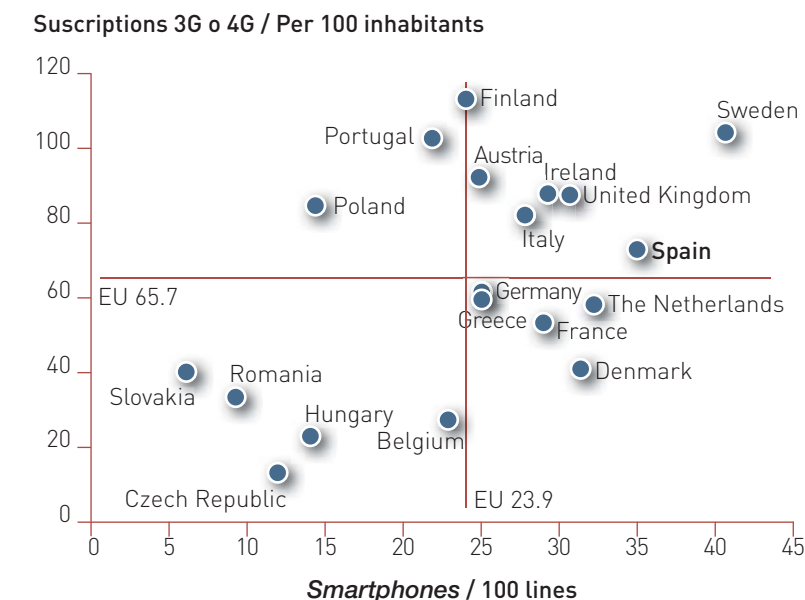
it mainly to find information, write e-mails, access social networks and show interest in mobile advertising (two-thirds of mobile Internet users say they are interested in some form of mobile advertising), and 36% have experienced making payments or reserving products from a mobile handset.

In terms of countries, China and India occupy the leading positions, although in other countries the percentage penetration can be higher in relation to the number of inhabitants (Table 4).

The data are more remarkable in the countries of the developing world, since in the last two years, the number of mobile phones has increased up until 1,500%. In the African continent in particular, the GSMA Association report says that the number of subscribers has grown by almost 20% annually for the last five years.

**Figure 6: Level of penetration of Smartphones and 3G or 3G+ mobile subscriptions, 2011**

Source: eEspaña 2012 originating from NetSize Guide (2011)



**Table 4: Comparison of mobile phones between 2010 and 2011**

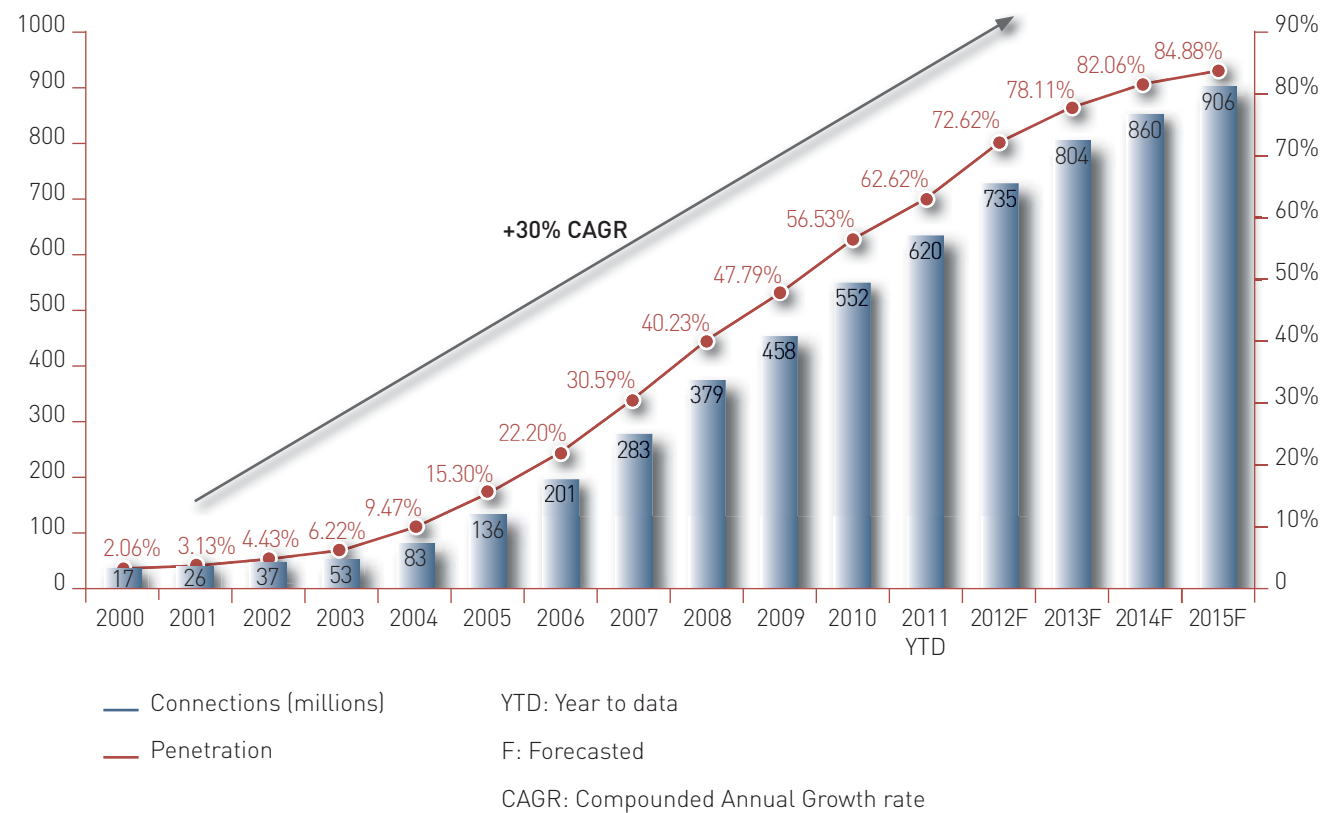
Source: Extract from statistical report published by ITU

| Country        | Number of mobiles |             | Per 100 inhabitants |        |
|----------------|-------------------|-------------|---------------------|--------|
|                | 2010              | 2011        | 2010                | 2011   |
| Argentina      | 53,700,000        | 55,000,000  | 132.88              | 134.92 |
| Brazil         | 202,944,033       | 242,231,503 | 104.10              | 123.18 |
| China          | 859,003,000       | 986,253,000 | 64.04               | 73.19  |
| Colombia       | 44,477,653        | 46,200,421  | 96.07               | 98.45  |
| Egypt          | 70,661,005        | 83,425,145  | 87.11               | 101.08 |
| France         | 63,200,000        | 66,300,000  | 100.66              | 105.03 |
| Germany        | 104,560,000       | 108,700,000 | 127.04              | 132.30 |
| India          | 752,190,000       | 893,862,478 | 61.42               | 72.00  |
| Indonesia      | 211,290,235       | 236,799,493 | 88.08               | 97.72  |
| Italy          | 90,600,000        | 92,300,000  | 149.63              | 151.84 |
| Japan          | 123,287,125       | 129,868,418 | 97.43               | 102.67 |
| Korea (Rep.)   | 50,767,241        | 52,506,793  | 105.36              | 108.50 |
| Mexico         | 91,362,753        | 94,565,305  | 80.55               | 82.38  |
| Nigeria        | 87,297,789        | 95,167,308  | 55.10               | 58.58  |
| Philippines    | 79,895,646        | 87,256,359  | 85.67               | 91.99  |
| South Africa   | 50,372,000        | 64,000,000  | 100.48              | 126.83 |
| Spain          | 51,601,028        | 53,066,828  | 111.99              | 114.23 |
| Turkey         | 61,769,635        | 65,321,745  | 84.90               | 88.70  |
| United Kingdom | 81,115,492        | 81,612,000  | 130.76              | 130.75 |



**Figure 7: Total number of mobile connections in Africa (in millions) and penetration level (as a percentage)**

Source: African mobile observatory 2011 of GSMA (Groupe Spéciale Mobile Association)



**It is thought that in 2000 there were some 1,000 million mobile handsets. The World Bank report on mobile telephones calculates that a figure of 6,000 million contracts will shortly be reached**

### Some recent applications

In socioeconomic terms, new technologies are considered an important tool for developing countries owing to the ease of using touchscreens. For example, Millennium Development Goals (MDGs) have demonstrated some of the objectives achieved through the use of mobile telephones:

- **Nigeria:** reduction in costs associated with grain sales. Access to mobile telephones has made it possible to obtain better information on cereal prices throughout the country, without incurring the high cost of travelling to the various markets, thus achieving 29% more profit. In this example, demand arose organically, and not via a specific programme.
- **Ghana:** reduction in greenhouse gas emissions of 2% by the year 2020 (GSM Association 2009). Mobile telephones can be

used as tools for environmental monitoring. Taxi drivers in its capital, Accra, were equipped with mobile telephones with GPS and a device with a carbon monoxide sensor to measure pollution levels.

- **Kenya:** three in every four people now have a mobile telephone. The application, called EpiCollect, helps undertaking monitoring of animal vaccination and treatment campaigns. The application and storage space are provided free of charge on the EpiCollect web page, which assigns a unique address for each project. This address is known only to users – such as national veterinary officers and field veterinarians – taking part in the project. Searches cannot be conducted on the EpiCollect database, thus preventing the merely curious from being able to find potentially sensitive information.
- **Medicine:** the rehabilitation clinic Dodd Hall, in Ohio, USA, started using equipment to help in rehabilitation from strokes and spinal injuries.



- **Companies:** interaction with clients and empowerment of company personnel. The CIOs (Chief Information Officers) are promoting mobile phones due to their ease of use and capacity for obtaining control systems, making it possible to analyse the state of the company at any time. The setting-up of BYOD (Bring Your Own Device) is being started, within the business environment, enabling employees to use their personal devices as tools in their jobs.

### Insurance applied to mobile devices

The insurance companies are trying to gain market shares among private customers and companies in this sector, owing to the

huge growth of mobile telephones, whether smartphones or not, and tablets. Another factor that has an influence is the great dependence arising from the storage of personal and/or professional information.

In addition, the fact that these devices can be expensive has led insurance companies, mobile manufacturers and telephony operators to launch products covering damage arising from theft, breakage, malfunctions due to dropping, rusting, loss, and fraudulent use of information or the making of calls from telephones that have been stolen or lost.

The insurance cost will depend on the offered cover, although it is very important to analyse certain factors: replacement value of the device, information stored, back-up copies,

**The fact that these devices can be expensive has led insurance companies, mobile manufacturers and telephony operators to launch products covering damage arising from theft, breakage, malfunctions due to dropping, rusting, loss, and fraudulent use of information or the making of calls from telephones that have been stolen or lost**



Figure 5: Most common covers



| Cover for theft or loss   | Cover for breakdown  |
|---|--|
| <ul style="list-style-type: none"> <li>Cost of Fraudulent calls up to a limit.</li> <li>Loss of Data.</li> <li>Recovery of Data.</li> <li>Blocking and Request for Line.</li> </ul> | <ul style="list-style-type: none"> <li>Blocking and Request for cards.</li> <li>Repair of parts out of warranty.</li> <li>Damage due to liquids.</li> <li>Breakage of screen.</li> <li>Rusting.</li> </ul> |

**If the number of internet-connected mobile devices is growing sharply and their functionalities can be applied for the benefit of society in general, should we consider their negative impact to be a critical factor?**



confidentiality, need to recover information due to loss or theft, use during travel within the country or abroad, type of user or guarantee offered by the manufacturer.

Generally, two types of cover are offered: theft or loss and breakdown (Figure 5). In the case of theft, they provide compensation to replace the mobile telephone or replacement via a device of the same value.

In the case of breakdown, repair or replacement of the device is envisaged for failures of the memory cards or damage by spilt liquids, remote assistance and recovery of stored data, for example.

### Thoughts about the future

The introduction of Smartphones and Tablets has completely changed the concept of mobility and telephony. The method of accessing the Internet from mobile devices, the appearance of long-range touchscreens and the improvement in bandwidths for the Internet connection are all facilitating the creation and release of functionalities capable of meeting user demands, including the original service of having a telephone conversation.

As a final thought, on a matter that should be discussed in a near future, if the number of internet-connected mobile devices is growing sharply and their functionalities can be applied for the benefit of society in general, should we consider their negative impact to be a critical factor? Is there really a possibility of physical or mental injury caused by these devices, such as

changes in behaviour? What safety measures should be taken to protect the information contained? What policies should be adopted at company level? Is LTE (Long Term Evolution, 4G) already a reality since it can exploit speeds of more than 100 Mb?

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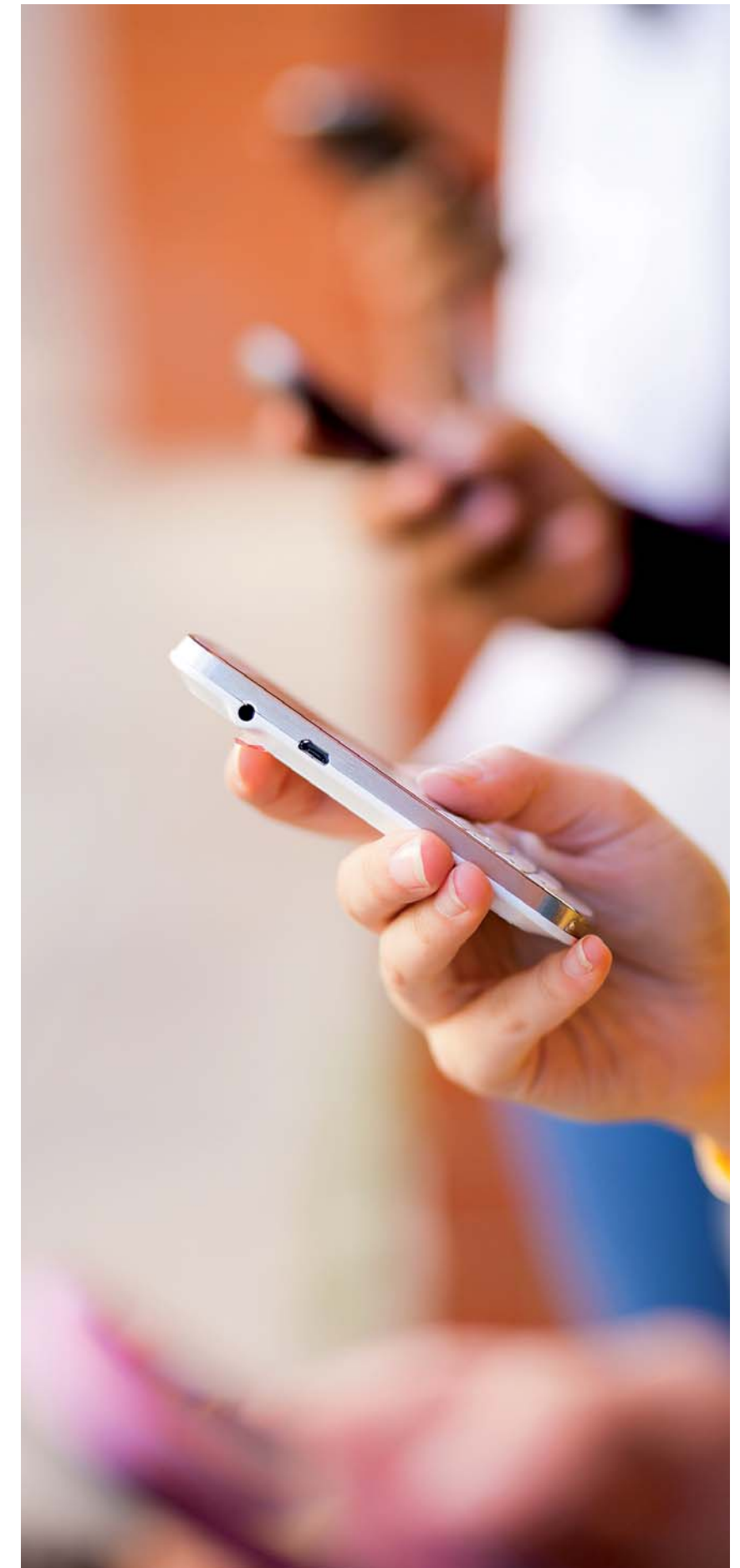
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# interview with

## José María Elguero

Director of the Marsh Spain Research Department  
Madrid - Spain



José María Elguero never thought he would end up in insurance, because his father worked at the General Directorate of Insurance and Pension Funds. But after obtaining a degree in Law, he changed his mind and decided to obtain the certificate of Insurance Agent and Broker. In 1989 he began working at Caser in the Research department. His career skyrocketed from there, leading him to a PhD in Law, an MBA from the Instituto de Empresa in Madrid, and he became a lecturer at Universidad Pontificia de Comillas (ICADE) and other high-level institutions.

He worked for 14 years in the civil liability department of Münchener Rück. He joined Marsh in 1993 as manager of the financial and professional risk department, and in 2009 he became director of the Research Department of Marsh Spain. He is a regular contributor to newspaper columns and he has written several books. His latest book is *Insurance Agents and their Civil Liability: Law 26/2006 on Brokerage of Private Insurance and Reinsurance*, published by FUNDACIÓN MAPFRE



*“When you overcome a crisis, it makes you stronger”*

The view on the crisis in Spain is evolving with changing circumstances and the steps being taken to cope with it. When you are part of an international consultancy and brokerage group, as is Marsh, you have a wider view. Damage and liability are two major insurance business lines. Doctor José María Elguero, Director of the Research Department of Marsh, is one of the leading Spanish experts in the field of liability, especially with regards to Directors and Officers liability, and insurance agents, the subject of his latest book.

### **As Director of the Marsh Research department, what are your duties?**

A basic pillar of this company is business management. In all companies there are departments that drive development and sales and form an integral component of the marketing strategy. The research department is part of this marketing area and our mission is to develop products and identify market opportunities by means of analyses we conduct and reports we draw up. This gains us presence and opinion leadership, factors also important for the customers, because they are more interested than anyone else in knowing the state of the market, how they can protect themselves from risks and how to finance that protection. The Research Department is a Marsh initiative which maintains very significant media presence due to its opinion



**The strategic vision of this company is to be one step ahead of events, so we knew that the crisis was going to severely affect company directors and officers, and that they were going to need protection**



Our structures are not prepared for a big avalanche of D&O claims. Neither are the economy, companies or the courts



The Germans know that crises are intrinsic to the way the economy works, and we will come through this crisis, I am convinced!

leadership and because it covers many areas. It is a very cutting edge department.

**What is Marsh's position in the corporate world and regarding the insurance and reinsurance it offers?**

In terms of position and what we perceive as our mission, we are active in risk consultancy and then in providing solutions, which entails work in brokerage of insurance, reinsurance and financial solutions, which brings us back to consultancy.

**Is the crisis unleashed by the payment of overriding commission considered over?**

All that ended up getting back on track. When you overcome a crisis, it makes you stronger. Marsh&McLennan has shown that it has a lot of inner strength. We are still number one and the game plan change in the market made us stronger. Maybe our advantage was that as we saw the market rules coming, we met them head on - by simplifying structures, internal process control and transparency. We gained

visibility. Sometimes, it is hard even for our own employees to understand this way of doing things, because we do our actual work in the present. But this measure of anticipating the future has made us stronger; it has allowed us to maintain our leading position and to assign a very high degree of importance to good practice.

**What client profile is Marsh aiming for?**

We have three major lines, ranging from the person who wants an insurance policy to the large IBEX 35<sup>1</sup> companies. Approximately half of the IBEX companies are customers of ours. This gives us a very clear view of the market. You gain a global perspective from working with international companies, but you also keep the local perspective through contact with your small and medium-sized client firms. It is a comprehensive service to meet the needs arising from the risks. We provide solutions both for the launch of a satellite, and for political or commercial risks, as well as meeting the general public's needs.

**In the world of risks, where is the business heading to for brokers in the future? Where does your research department see the potential? What are the big challenges?**

In technology, without a shadow of a doubt. We live in the "information society", with all the risks associated with cyber-crime, cyber-security, technological developments and the communication media. The second challenge pertains to people, their quality of life, bionics, biology, developments and research in the area of stem cells, lengthening life spans, the fight against diseases. A third challenge, which we put on the table at the Davos forum, is everything related to climate change and its consequences. We have been working on this issue for a long time. It has ramifications for communication, transportation, infrastructures, production lines, questions like getting food supplies to Africa, to the Sahel for instance, or whether a nuclear accident like the one in Fukushima could happen again. All this is related to business continuity and supply chains. These are the three priority lines of business. Of

course there are many more, but these are the major short-term ones.

**And how has the decrease in business associated with the crisis affected you, with the disappearance of thousands of companies and self-employed workers? Not long ago you said that despite all this there was a 30% increase in D&O (Directors & Officers) liability policies.**

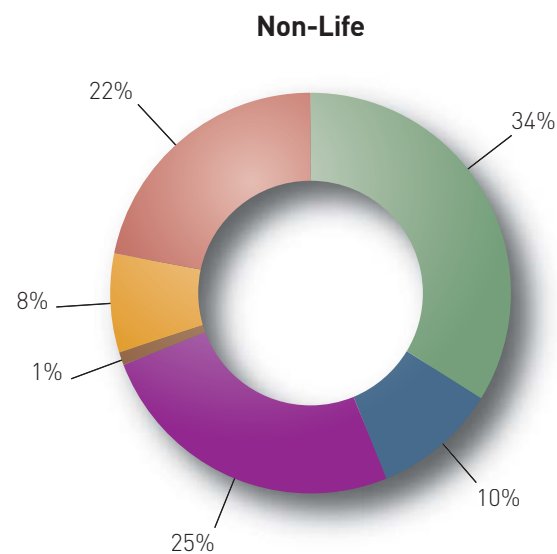
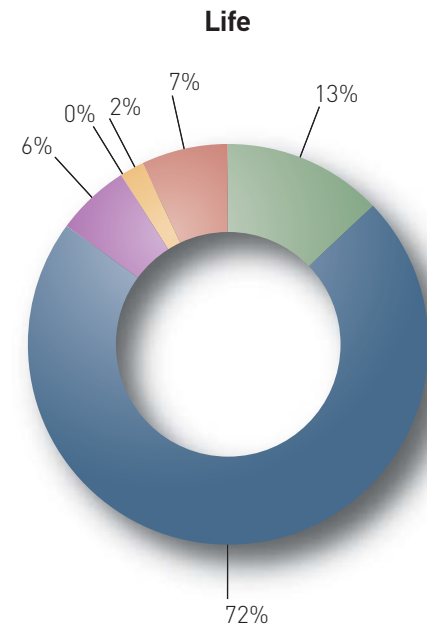
That is right. A company of our size and scope is compensating for reduced business in certain areas, with a growth in others. It is similar to the way lawfirms achieve balance in their business. The strategic vision of this company is to be one step ahead of events, to predict the scenarios. That is how we knew that the crisis was going to severely affect directors and other senior executives in large companies, who were going to require protection. And there we are; for better or worse, it is now a trendy insurance policy. Last year 7,000 companies that did not have these policies bought them from us, in full recession. In this way, you compensate for what you lose on other

<sup>1</sup> The index IBEX 35 (Spanish Exchange index) is the benchmark stock market index of the Spanish Stock Exchange. It comprises the 35 most liquid Spanish stocks traded in the four Spanish Stock Markets (Madrid, Barcelona, Bilbao and Valencia). It is a market value-weighted index. Unlike other indexes as Dow Jones, the weightings of companies are not capped.



**Life and Non-Life Premiums according to distribution channels in the Spanish market**

Source: Marsh Research department with ICEA data



- Agents
- Brokers
- Other channels
- Insurance bank operator
- Electronic
- Offices and employees

fronts. An important factor is risk consultancy, which we never gave up and which helps us to promote the insurance brokerage area. There is a lot of competition in special lines for directors and officers. Part of this comes from the large brokers, the rest is highly fragmented. We have a study that we conducted on management of family-run companies in the Autonomous Community of Cantabria in northern Spain.

**Why Cantabria?**

Due to several circumstances. First of all, it is a very reachable geographical area, very provincial, with companies we know and who are our clients. We know the institutions, and our business portfolio allows us to have a representative sample that can be extrapolated to other places in Spain.

**Continuing with D&O, where did it stem from?**

It began to be implemented in Spain in 1989, but its insurance origins date back to Otto Von Bismarck, in Germany, when the German companies began to be subject to liability. Up to then, unethical behaviour by firms had entailed no consequences for them. When the 1929 crash happened, no claims could be made against the directors because the country's whole economy was collapsing.

**Germans are still frightened by the thought of their hyperinflation in the 1920s.**

The Germans know that crises are intrinsic to the way the economy works. We will come through this crisis, I am convinced! And we will have another crisis. They come in cycles. You have to immerse yourself in the cycle and try to adapt to it. So that's it.

**Let's carry on with the historical development of D&O.**

Based on the laws on public limited companies, the first policy in Spain was drawn up in 1990. We have here an insurance line that is 22 years old, but which only reached cruising speed in the last eight years. In fact, the study that we conducted shows that it has experienced its fastest growth this year.

**Are there many claims?**

They have increased by 24%. But compared with other insurance areas, we have not yet seen large peaks. Our structures are not prepared for a big avalanche of claims.

**The agent's responsibility**

**Where did you get the idea to write a book like "The Insurance Agents and their Civil Liability"? Why didn't you include all the insurers and brokers, considering that when we talk about the agent's liability towards the public, we are also talking about the insurance company's liability?**

Well, there are several reasons for this. First of all, in 2000 FUNDACIÓN MAPFRE gave me a research grant for a paper that I was working on. It was called "the insurance agency contract", a subject that had not been written about at all. That book was the starting point for what came later. In time, FUNDACIÓN MAPFRE suggested that, as there was a new brokerage law, I could continue to work on and update the whole area of the agency contract. There are several reasons for not including the theme of brokers in my books. First of all, there is already a book by José María Muñoz Paredes, who is a Professor of Commercial Law and a great friend of mine, and who has dealt with the subject extremely well. So, there is hardly anything I could add. Secondly, I work in brokerage, and I would not want that to influence me. But there is another weighty reason that has to do with acquisition of premiums. One in four policies that are sold in Spain is brokered by an insurance agent.

**That would be in Non-Life.**

True. If we talk about Life, only 13% of policies are brokered, whereas the figure for Non-Life is for 34%. The banks account for 72% in Life. But the average is as stated: one in four insurance policies is acquired by an agent. In the rest of the world, the proportion varies between 2 and 3 out of every 4.

**Are there many complaints against insurance agents?**

When we look at the records of the General Directorate of Insurance and Pension Funds, we see that 70% of complaints state that claims are not handled properly. This is a very important point to reflect on, and that is what I attempt to do in my book, where you can also find a quite novel view of liabilities, humbly approached in the case of Spain. And there is responsibility, really. For example, if on a Friday someone forgets to notify the company of a new policy that has just been signed and an accident occurs over the weekend, what happens in this case? The agent may be liable. Depending on the agent, the claim will be covered by the company or the agent will have to cover it with his or her policy. If they do not have a policy, they will still be liable.

**Are you familiar with the liability situation of the insurance agent in Latin America?**

I do not know whether agents in Latin America are more prestigious, but they certainly have a better chance of becoming widely known by oral spreading. The liability situation is probably influenced by the way things are done by their northern neighbour. Most of their legislation, both on insurance and in other areas and regarding penal codes, is directly inspired by ours, by European law. The tenets of the European legal system formed the basis for legislation on the other side of the Atlantic, but with the advantage that the texts and ideas were transferred when their content had already been well tried and tested.

**When we look at the registries of the General Directorate of Insurance and Pension Funds, we see that 70% of complaints state that claims are not handled properly**

Neither are the economy, the companies or the courts. The truth is that the tendency to claim is increasing. Last year, one in four companies that offered this type of insurance faced a claim. Many are settled out of court.

**What is the situation on brokerage payments?**

When the new IMD2 Brokerage Mediation

directive is ready, we will have to be even more transparent. Clients will know how much the broker will receive, but this does not worry us. Our customers know this. Some firms have commissioned us to perform audits on policies brokered by other agents, to have a guarantee that they are well covered against their risks.





**My advice for companies is to examine their risks very closely; all the more so if they are going to go international**

**What is the main concern of the insurance industry in Spain today?**

Automobile and household claims. These are increasing at a rate that is not alarming yet, but could well become so.

**How important do you consider corporate social responsibility to be?**

I am glad you asked that about Marsh, because we have implemented a very nice initiative. On Fridays, the employees are allowed to dress casually but if they do, they have to make a small contribution to a charity fund for social causes, which is run by a volunteer group. Beforehand, the group lets us know by email what the money will be used for.

**A piece of advice to companies**

They should examine their risks very closely and all the more so if they intend to go international.

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## The future of the agent

**What future does the insurance agent have competing against all kinds of distribution systems and technologies?**

I still say that the key element is people.

**Provided that they do not make the product more expensive.**

Yes, but they are still important. If in addition they can use technology, they will have a great advantage, because the insurance business is quite ethereal; it is based on trust, which is not easy to establish. Insurance agents play a very important role. They must be authorised, guaranteed, trained, have civil liability, and they have the challenge of training, keeping up to date, maintaining their image and reputation, as does the entire insurance sector. Of course, it is essential that they keep up with technology. It would be inconceivable to insist on issuing policies on paper when other documents are sent to you by SMS.

**How are insurance agents looked upon internationally?**

Of all the countries that I have studied I would highlight the case of Germany and the United States. In Germany, an insurance agent is quite a powerful figure; the business is well regarded and the agents have a good image. In the United States, they are true consultants with a very high degree of professional responsibility to the community. They are officially authorised to do their job. In Spain, as we know, the situation is pitiful. Here, when you want to insult someone you say that they are an insurance agent. In France, Japan, Germany or the United States, insurance agents are well respected. Here, on the other hand, until recently the qualification of insurance broker was given with certain university degrees, even if the graduate had no idea of the insurance business.

**Are there not too many insurance agents?**

In Spain, there are too many of everything; too many banks [up to now], too many insurance companies, too many brokers,

too many insurance agents. This statement is not positive, given the need for solvency, training, and specialisation. Logically, it leads to concentration. When I began working, around 1990, there were over 600 insurance companies in Spain. Today there are 279 left, although many belong to the same group. Without a doubt, there is a long way to go. Agents are destined to group together; this is an important point. A possible solution may be for the formation of agency companies.

**Implementation of Solvency II, in 2014 or 2015, although it provides for a long transition period, is going to lead to many small insurance companies joining together, with consequent repercussions for their brokers.**

Right, and this is going to happen not only as a result of Solvency II but for other reasons. We know some of these but there will be others that we are not yet aware of. If we have gone from 600 insurance companies to half that in 20 years, how many companies will be left ten years from now?

**Would you venture a prediction about how the industry will look in five years?**

No. Neither my company nor I personally. Given what is happening in the economy, it is hard to make predictions, not only for the next five years, but even for the coming couple of months. I would like the insurance industry to be solvent, to have a high degree of prestige and a great reputation; but any attempt to outline a strategy for the future would be mere speculation.

**In his book "A Brief History of the Future" Jacques Attali predicts a world that will revolve around the industries of insurance and entertainment.**

It is very hard to know if we will reach that point. For the time being, the insurance industry, within the financial sector, has done its homework and therefore has been hit less hard by the crisis than other industries. It could be because it has a much better understanding of risk.





# interview with

## Dr. Rafael Matesanz

Director of the National Transplant Organisation (ONT)  
Madrid - Spain



*“We became the world leaders for transplants, and we still are”*

Rafael Matesanz was born in Madrid on 22 October 1949. He is married and has two children. He obtained his degree in Medicine and Surgery from the Madrid Complutense University in 1972 and he obtained his PhD in these specialties from the Madrid Autónoma University in 1979.

Specialising in Nephrology, he became the head of the Nephrology Department at the Ramon y Cajal Hospital in Madrid. He focused his clinical activity on comprehensive care of chronic renal insufficiency, from dialysis to transplantation. He is fluent in English, French and Italian. He was the driving force behind the creation of the National Transplant Organisation (ONT) in September 1989, and has been its director-in-chief from the beginning. The organisation, which belongs to the Spanish Ministry of Health, promotes, plans and coordinates all of the activities associated with the donation and transplantation of organs, tissue and bone marrow. Dr Matesanz is responsible for what is known internationally as the “Spanish Model,” for which Spain is ranked as the outright world leader in solid organ donation and transplantation.

From May 1996 to May 2000 he was the General Director of Health Assistance with the National Health Institute (INSALUD), head of primary and hospital care for 10 of the 17 Spanish Communities. From its creation in 1990 until October 2000 he was President of the National Transplant Commission. From 1995 to 2000 and from 2003 to 2005 he was President of the Council of Europe Transplant Committee. Between 2005 and 2007 he was Vice-President. From 1989 to 2001 he was the Secretary of the National Commission on Nephrology. From 2001 to 2008 he was the President of

the National Commission on Nephrology. Between 1995 and 1997, he was Councillor of the European Society for Organ Transplantation (ESOT).

He has directed several national and international publications, has authored over 500 articles and of 100 chapters of books on nephrology, transplantation and health management. He has also been Director of Masters degree courses, advanced training courses and various post-graduate courses at several universities. He is a member of the board of several foundations, consultant and member of councils and committees advising several national and international bodies. He is Director of the Oncology Network of the Toscana Region (Italy). Between 2002 and 2004 he was an advisor to the Greek transplant organisation EOM; from August 2003 he was an associate of the Argentinean organisation of donors and transplants (INCUCAI). In 2005 he was an advisor in matters of transplants to the Institute of Medicine (IOM) -National Academies of Sciences- USA. Rey Jaime I Award for Clinical Medicine in 1999. He has the Great Cross of the Civil Order of Health, awarded in December 2006. He holds the “Order of Merit of Duarte, Sanchez y Mella” from the Dominican Republic, as officer. “Recognition Awards TTS (Transplantation Society) and Roche Award for Worldwide Impact in Transplantation 2008 Sydney (Australia).

From September 2004 until the present, he has been the national coordinator for transplants and Director of the National Transplant Organisation of the Ministry of Health. In 2010 he received the Prince of Asturias International Cooperation award as Director and founder of the National Transplant Organisation.

The undeniable success achieved by the “Spanish model” in connection with transplants has gone beyond our borders and has caught on strongly in Southern Europe and Latin America. This success is based on a number of interrelated factors: people’s generosity, our own formalised ethical system, and a very professional management and coordination in the public sphere, which allows neither shortcuts nor unfair preferential treatment. A further key factor is a cost rationale resulting in far lower expenditure for treatment by transplant than for the alternative high-technology therapy needed to keep the patients alive. Being aware of events in this sphere means knowing one of the most dramatic stories of human achievement.

**Since when have you been at the head of the National Transplant Organisation (ONT)?**  
Since its creation in September 1989.

**What was the motor that jumpstarted the ONT?**  
It was something totally pragmatic. Nephrologists in Spain, as in other countries, needed to obtain organs to transplant to our patients on dialysis. Kidney transplants were performed much earlier than other organ transplants. I had seen how they went about it at the Ramon y Cajal Hospital in Madrid, and I realised that whether an organ was donated or not in individual cases depended on who was in charge. When I had the chance, I explained hospital by hospital and in the Autonomous Communities all over Spain, how the structural organisation should work and how we could simplify something that looked complicated.

**Evolution was fast. It seems that from 1990 on, donations skyrocketed and everything was well organised.**

In 1989 in Spain we had 14 donors per million inhabitants. We developed the system and donation began to be implemented increasingly throughout the country. It started more vigorously in the Basque Country, Madrid and Catalonia, as they were better structured, although the other Autonomous Communities followed. We became the world leaders in 1992 and we still are, twenty-one years later.

**Being leaders in the management of transplants must incur a special responsibility given that many countries are trying to improve their capabilities in this field?**

I sometimes look back on what Spain has contributed to the world in this area, and it all

**People are generous, but what we have proved is that the problem with donations is one of management**





In order to maintain people's trust it is essential that there is no possibility of giving preferential treatment, for financial or other reasons, when it comes to allocating organs

**There are few body components that have not been transplanted and the frontier was crossed quite a long time ago, when we progressed from transplanting organs and tissues to transplanting composite tissues**

begins with something very simple: donations do not come about spontaneously nor do they fall from the sky. It seems obvious, but this fact has had a major effect on the transplant situation in many countries, even those where they ran awareness campaigns to encourage organ donation - with only limited success. People are generous, there is no doubt about that, but what we have proved is that the main problem is how donation is approached and managed. If there are well-prepared professionals in the hospitals, who can explain the facts to the families, the process can be coordinated and the outcome is successful. Naturally, at this point there are countries that are replicating our model, like Portugal, which started about five or six years ago, and also Croatia, France, Italy and Belgium to a greater extent. In some countries transplant management is more complicated, because their health systems are very different from ours.

**Are you talking about countries where organs are sold?**

No, I am referring to countries with different healthcare systems. For example, it is very hard to adapt our model in Germany because private mutual insurance companies carry a lot of weight there. The United Kingdom has a very powerful national health service. They have examined our model and have adapted it. Strangely, doctors' wages are far higher in the UK, which makes it that much harder for the UK to have our type of medical coordinators. In Latin America the number of transplantations performed is growing fast; the increase of 40% in the last five years is the highest in the world. To a large extent this is due to the fact that we have trained the professionals there. Right now we are training organ donation managers in Chile, Argentina, Uruguay, Venezuela, Colombia,

Peru and several other Latin American countries. Australia has also adopted a system that is very similar to ours.

**What system was in use before the ONT was founded? What led to the creation of this organization?**

In the 80's there was no organisational structure subject to normative guidelines. Each hospital organised its own transplants as best as it could. In my hospital, when we nephrologists needed organs, we had to handle the entire process intended to result in donation. We diagnosed the brain death of the donor, we spoke with the family, we obtained the organs, and we monitored the transplant patient. For heart or liver transplants, it was clear that the doctors specialising in those organ systems could not just go solo. So, we saw the need to have

well trained specialists in each hospital, who could coordinate the process of donation and removal of the different organs, and who would always have appropriate teams ready to ensure that no organ that could be transplanted would be lost. This, along with communication and coordination with the ONT centre, made it all work.

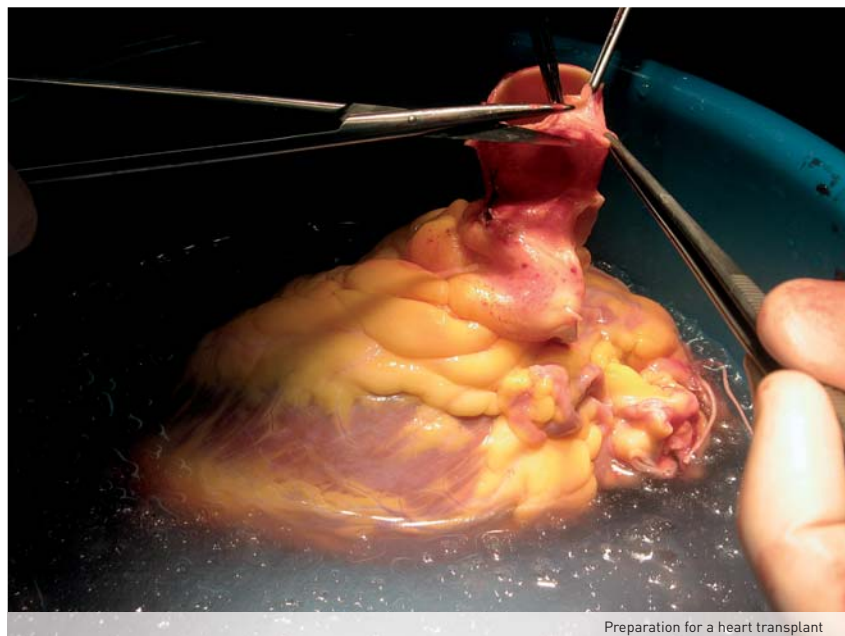
**How many transplants were performed per year at that time?**

Over one thousand of different types: kidney, liver, heart and pancreas, among others, but almost a thousand were kidney transplants. Last year we reached 4,200. So, we have increased transplants fourfold. In addition, there has been an exponential increase in other forms of transplant, such as cell and tissue, which barely existed back then, though today thousands of them are performed. We can estimate that this





Donor's heart removal for a heart transplant



Preparation for a heart transplant

year we will perform around 15,000 to 20,000 transplants of this type, including bone, bone marrow, umbilical cord, cells and corneas.

**After these advancements, where is the frontier for transplants? At this rate, even brain transplants seem likely.**

There are really few organs we have not yet transplanted. The frontier was crossed quite a long time ago, when we progressed from transplanting individual organs and tissues to transplanting composite tissues. Ideally, prophylactic medicine would prevent organ malfunction and the need for repair or

replacement. But, when it is necessary and possible, parts can be replaced by means of transplantation. The new transplant philosophy centres on cell therapy, stem cells. The idea behind this is that, instead of replacing the part, the patient is given a series of cells capable of repairing the affected organ. Let's say that this is the new frontier, but there is still a long way to go. The results are not yet satisfactory, and it will take us decades to get there. But it is an area with great potential.

In the last ten years composite tissue transplantation has advanced immensely: arms, legs, the face. Even uterus transplants have been proposed, but I think this is rather off target. In the near future, we will be seeing organ structures, especially hollow organs, covered by stem cells. For example, in recent years cadaver tracheas covered with stem cells have been transplanted. Since the stem cells are the patient's own, there is no rejection. This works with hollow organs; the problem arises with solid organs, which are much more challenging.

**What is the most complicated type of transplant?**

Technically, the intestine is. Also a practice called cluster transplantation, which is really a multi-organ transplant involving the liver, stomach, intestine, pancreas and kidneys, for example. Multi-organ transplants in children are also very complex. La Paz Hospital in Madrid is one of the best centres in Europe for these types of operations. Transplanting seven organs in the same patient involves microsurgery, which is among the most sophisticated operating techniques.

**Would there have been further advances in transplants if they were commercialised and were promoted by private health companies?**

I do not think so. This is an issue that is linked to each country's interests. For example, in the United States transplants are mostly organised by private medical companies. Countries in Southern Europe have clearly chosen transplants through the public health system, and I believe that this was a good choice because it entails transplantation of something that was selflessly donated by another human being, be it organs, tissue, marrow, cells or bones. In order to maintain people's trust, it is essential that there should

be no place for preferential treatment when it comes to receiving the organ, for financial or other reasons. We are at the top of the ranking on transplants in the world because we have maintained a cast-iron system, meaning that we do not admit any type of shortcuts when it comes to finding donors. And this is incompatible with private medicine. There are numerous examples all over the world. As soon as people see that wealth provides easier access to a transplant, the whole system collapses. On the other hand, given the public nature of our system, which is intended for everyone, we know that we are in effect constantly subjected to audit, and that our ratings of transplants and donors are well known. This is very important because we are dealing with human lives here. We are deciding who lives and who does not.

**Is the profile of the Director of the National Transplant Organization more technical than political?**

I think so. If we had to define what we do, I would say it is managing people. For a long time, we had a centralized national healthcare budget, but now, with a health system that is as decentralized and non-pyramidal as is Spain's we cannot manage anything directly, not in Andalusia, Madrid, Catalonia or in any other autonomous region. We can only coordinate very large numbers of people, who are not even specifically assigned to the transplant system. When we coordinate several agencies, we work with large teams: surgeons, coordinators, clinical staff, nursing staff, laboratory technicians, couriers, airport staff and many other professionals who are not under our direct supervision. We have developed protocols to motivate and train them in their work. Again, what we manage is people. And all of this, with a budget under four million Euros.

**Despite the fact that the health system in Spain provides full coverage, many people also have private insurance. Who do they go to when they need a transplant?**

People usually go to the public health system, if that is the one that works. In the case of large groups of civil servants, such as MUFACE<sup>1</sup>, the person who requires a transplant is put onto our common list, just like any other public health system patient. It could not happen



any other way, and once the procedure is performed and the cost calculated, the bill is sent to their insurance.

**In a climate of crisis like the current one, is it possible and necessary for the system implemented by the ONT to be maintained?**

Sustainability of the system is fundamental. Could the scheme be transferred to the private sector? It would not work the same. It has proved successful partly because people, donors and patients, firmly believe that this is a system belonging to everyone and for the benefit of everyone.

<sup>1</sup> MUFACE: *Mutualidad General de Funcionarios Civiles del Estado* (General mutual health insurance of State officials) <http://www.muface.es/>



The scheme would not work the same in the private sector. Part of its success has been achieved because people, donors and patients, firmly believe that this is a system belonging to everyone and for the benefit of everyone



Human tissues preserved in liquid nitrogen



Spain is the European country with the highest number of stored umbilical cords, and between 17,000 and 18,000 transplants have been performed, saving the lives of many children and adults with leukaemia or other cancers

## Longer lives

### What is the average life expectancy of a transplant recipient?

That depends more on the patient than on statistics. Spain has a huge number of elderly inhabitants and we are performing transplants in people aged over seventy. We obviously cannot expect a further life expectancy of 25 to 30 years for those patients. At present, the world record for post-kidney-transplant survival is held by a woman who received her replacement kidney in 1960, in Boston (USA). This means that she has survived for fifty-two years thanks to a kidney donated by her sister, and both of them are fine. In Spain, the first kidney transplants were performed in 1964. Now we have quite a few people who have lived for over forty years with a transplanted kidney. In general terms, survival rate for this type of

transplant is fourteen years if the kidney comes from a cadaver and over eighteen if it comes from a living donor.

### Is it harder to determine survival rate for recipients of other organ transplants?

Every case is different. For example, in Spain we have patients who have lived for over 25 years with a transplanted liver, and there are many cases in the world at large of such patients who have survived for 30 years or more. The situation is similar for heart transplants, though those who received replacement hearts in the pioneering days did not have such good surgery or anti-rejection drugs, and this all had an influence, but it is also true that both the donors and the patients were much younger. Now age is not an impediment to receiving a transplant.

### Has anyone ever questioned the ONT?

Not in so many words. We are an entity within the public sector that has its budget stable. But we have difficulties when general health service budgets are reduced. The problem then is not with the health system or with the transplants but with the whole of society. To perform transplants, resources have to be mobilised, and in times of economic cutbacks this is harder to do. In recent years, many of the people who work in the transplant area have seen their pay drop by 20%. We have expressed our concern, because there is an essential fact to bear in mind: when a person who needs regular dialysis has a kidney transplant, this translates into cost savings.

### What is being done regarding blood banks and usage of blood and stem cells from neonatal umbilical cords?

These are two different things. The cells in the umbilical cord are blood stem cells that yield blood. In the 80's and 90's a universal strategy was developed for storing umbilical cord stem

cells. Today there are more than 500,000 umbilical cords stored in public banks around the world, and in Spain we have over 10% of these cords. Our country is also the leading country in Europe, regarding blood units of umbilical cords being stored, and worldwide, we are only behind the United States. Between 17,000 and 18,000 transplants have been performed, saving the lives of many children and adults who had leukaemia or other cancers. The harvesting of these cords is fully justified. What is not so justified is to keep the cord for oneself, which is what the private sector offers. There is a reason for this: if one of those children or adults whose umbilical cord has been stored contracts any of the diseases that make it necessary to resort to the cord, but it is a congenital disease or of genetic origin, you have to discard your own cord. This means that keeping the umbilical cords in private banks must be analysed from the financial perspective because the statistical probability of having to resort to it, and that it will be useful to you, is very, very remote.



**Now age is no impediment to receiving a transplant**

But that is a decision for each individual. What does make sense is the system of allogeneic banks (where donor and recipient are different people), and these are public banks available to everyone. We have eight such banks in Spain. The cost of storing the umbilical cords in private banks is high but their medical usefulness is unclear. It could be that in the future, in 30 or 40 years, there will be other types of treatments that will totally supersede the purpose of these banks today.

<http://www.ont.es>

The European Union and the European Council have specifically recommended through several documents the total or partial adoption of the Spanish model for transplants: *Meeting the Organ Shortage: Current status and strategies for improvement*, [http://www.ont.es/infesp/DocumentosDeConsenso/Meeting%20\\_the\\_organ\\_shortage.pdf](http://www.ont.es/infesp/DocumentosDeConsenso/Meeting%20_the_organ_shortage.pdf)

**An island within the Spanish Health System**



**Who does the National Transplant Organisation come under in organisational terms?**

It has always been under the Ministry of Health, and it is located in the Instituto Carlos III, which was incorporated in the eighties and is conceived as a research entity within the overall health system. For a long time, we have been like an island in the Institute's premises, even though we are not part of it. The reason why we are here is because we are active 24 hours a day. Our call centre operates at all times, every day of the year, and this makes it quite difficult for us to occupy offices in the Ministry.

**How much does it cost the Spanish taxpayer to maintain the ONT?**

We have an annual budget of 3.8 million Euros, which includes the works developed by the ONT but not the performance of transplants.

**That does not seem to be too much.**

Transplant costs are quantified. There

are probably few things in healthcare that are subjected to such close scrutiny. To understand the cost/benefit ratio of treatment by transplant, we can look at the classical kidney transplant. When a person has renal insufficiency there are three options: dialysis, a transplant, or being left to die. Of course, depending on the country, the last option is not even contemplated. The average cost of dialysis in the European Union, everything included, is around 50,000 Euros per year. For the person who has received a transplant the cost is more or less the same for the first year, but afterwards it goes down because, if there are no complications, care is limited to the medication alone. This means that the cost of maintaining a kidney transplant recipient is 5,000 to 6,000 Euros per year. But for patients receiving dialysis, the costs just go on rising. The more complications the patient has, the more it costs. In view of this, the outlay for a transplant is recouped within the second year. This is one of the reasons why transplants are performed globally. Spain is the only country in the world where we have the same number of dialysis patients as transplant recipients. If they were undergoing dialysis, it would cost the public coffers double the amount.

agenda

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