



# Banking & Technology Snapshot

## Digital economy and structural change

# Growing need for security in online banking

## Biometrics enjoy remarkable degree of acceptance

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Mobile devices (smartphones, tablets) are conquering mass markets and are increasingly being used for online banking. However, they are also increasingly susceptible to abuse.

Both the fear of cyber attacks and experience of internet crime are on the rise. The security consciousness of users is also increasing. This has led to high growth rates in the IT security market. Sales are expected to rise to EUR 25 bn by 2025.

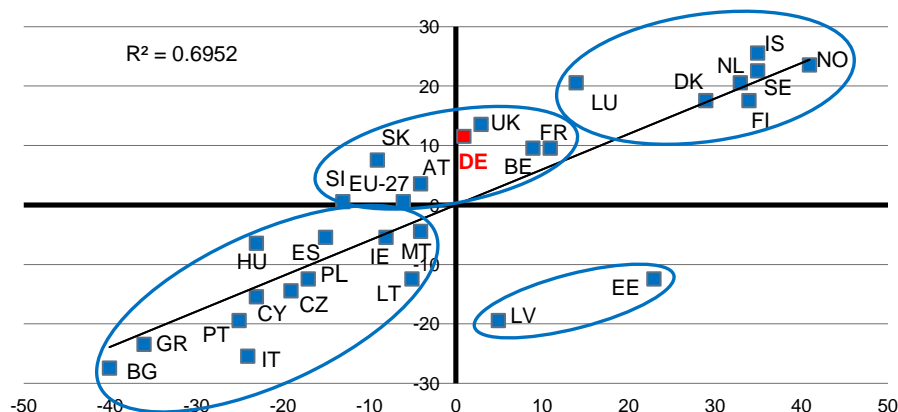
Growing concerns about data security mean internet users are becoming more inclined to pay for online banking services.

Biometric authentication methods enjoy a remarkable degree of acceptance among the population. Hence, there is a growing probability that biometric technologies could also be applied in banking.

Anti-virus software and the necessary IT security standards are regarded as the norm in many European countries. Especially the Nordic countries are acutely aware of IT security issues. By contrast, alarmingly little attention is being paid to IT security especially in some southern and eastern European countries.

European online banking users pay attention to appropriate IT security

x-axis: Deviation from average use of online banking, pp, 2010  
y-axis: Deviation from average equipment with security software, pp, 2010



Sources: Eurostat, DB Research

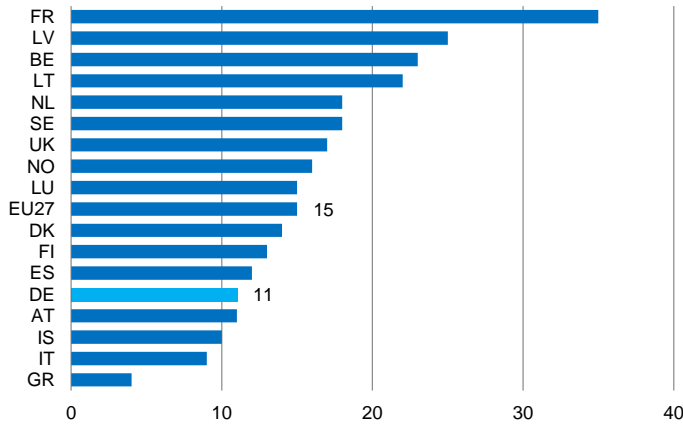


## Growing need for security in online banking

### Online banking in a European comparison

1

% of population, change (percentage points) 2010 vs. 2006



Sources: Eurostat, DB Research

### Nordic countries are frontrunners in online banking

In 2010, 43% of Germans used online banking. In a European comparison, this puts Germany above the EU-27 average. The Nordic countries are still a step ahead in online banking.

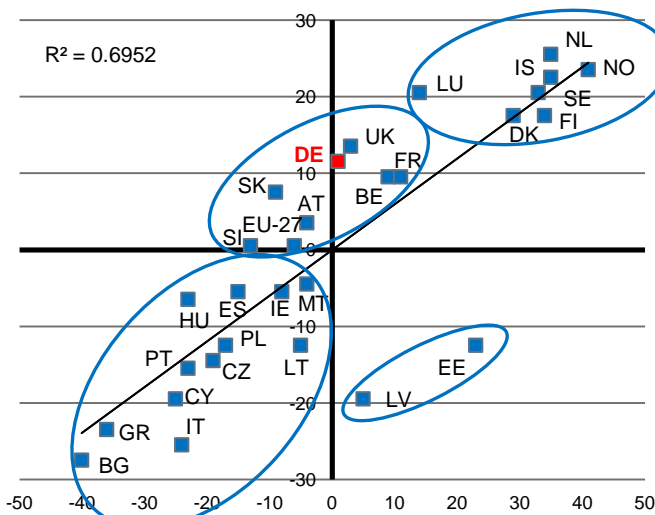
Looking at the growth rates in Europe between 2006 and 2010, France, Latvia and Belgium achieved enormous growth. Even compared with the leaders, Germany is lagging behind, coming in below the EU-27 average in terms of growth.

### Online banking users pay attention to appropriate IT security

2

x-axis: Deviation from average use of online banking, pp, 2010

y-axis: Deviation from average equipment with security software, pp, 2010



Sources: Eurostat, DB Research

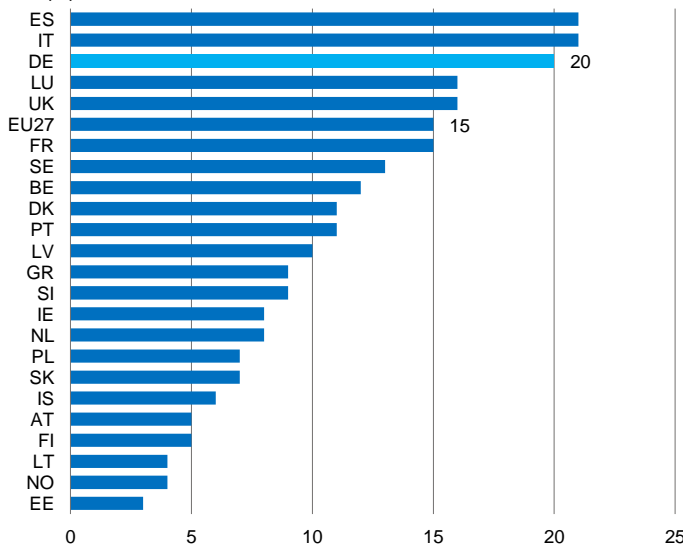
### Healthy awareness of security issues conducive to online banking ...

The countries that rely increasingly on online banking have also implemented the strictest data security measures. In this group, Germany has an average ranking. Greater security consciousness and/or the increasing use of anti-virus software and firewalls could provide an additional boost to online banking. In Italy, Greece and Bulgaria, by contrast, alarmingly little attention is given to data protection, which makes the use of the internet in general a rather risky business.

### Do not use online banking for security reasons

3

% of population, 2010



Source: Eurostat

### ... whereas exaggerated concerns would be an obstacle

One in five Germans considers online banking to be risky and is therefore refraining from performing digital banking transactions. There is even greater concern in this respect in Spain and Italy. In these two countries, over 20% of the population does not use online banking for security reasons.

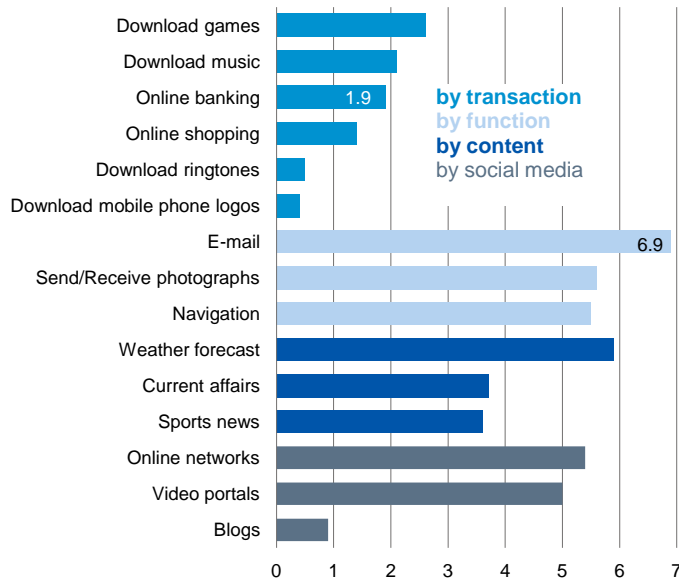


## Growing need for security in online banking

### Mobile use of internet by functions and services

4

Millions, German population aged 14 to 69, n = 10.6 m



Sources: Online-ShoppingSurvey 2011, Enigma GfK

### Mobile internet conquering mass markets

One-third of all new mobile phones sold in Germany today are smartphones. The boom in sales of smartphones and tablets will boost mobile internet usage throughout the world. 11.8 m smartphones and 2.1 m tablet PCs were sold in Germany in 2011. Growing markets for apps are also indicative of rising mobile internet usage.

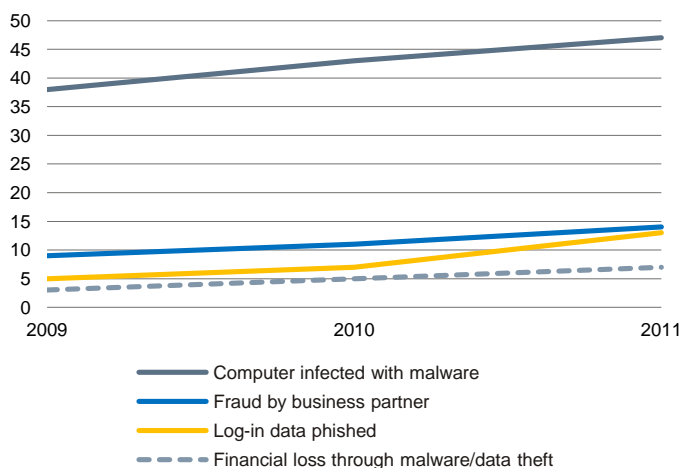
Online banking will play an increasing role both via desktop computers and mobile devices. Largely independent of time and place, web-enabled end-user devices mean a better quality of life for many users and are becoming increasingly attractive ("OnLife"<sup>1</sup>).

However, mobile online banking adoption rates are only growing slowly at present. Mobile devices are particularly susceptible to abuse as they frequently lack security features which makes them vulnerable to malware and spyware. There is evidence that criminal activity to acquire confidential internet information such as personal data and passwords is increasingly focusing on (mobile) internet technology.

### Experience of internet crime

5

% of Germans aged 14 and over



Sources: BITKOM, Forsa

### Cyber attacks, fraud and data theft on the rise, ...

Over the past few years, internet users have seen viruses, trojans, fraud (e.g. fake online shops), hacking and data espionage become increasingly widespread.

#### ... doing increasing economic damage

According to the Bundeskriminalamt, Germany's Federal Criminal Police Office, the greatest risk for internet users lies in the infection of computers with malware and spyware. The economic losses incurred in recorded internet crimes in Germany amounted to around EUR 61.5 m (+66% yoy) in 2010 – and the figure is rising.

<sup>1</sup> Increasing digitalisation also raises demand across all sectors for universal and seamless connectivity without additional cost/input.



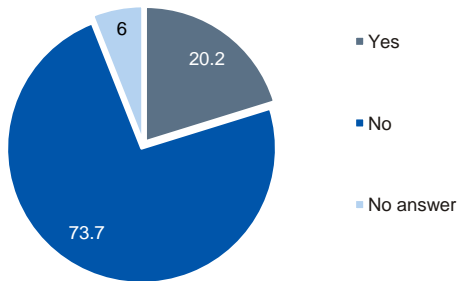
## Growing need for security in online banking

### Fears of internet fraud growing

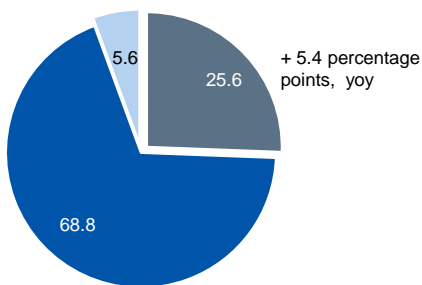
6

% of German population aged 14 and over, n = 1002 (2010), n = 1006 (2011)

2010



2011



Source: (N)Onliner Atlas 2011

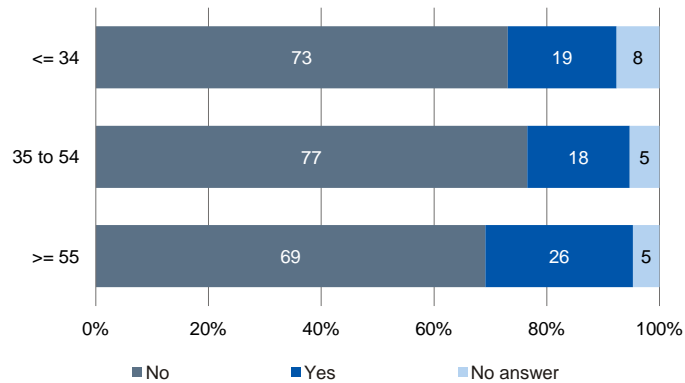
### Growing concern regarding online fraud

In 2011, roughly one-quarter of Germans over the age of 14 confirmed they were worried about internet crime. Particularly in the age cohort of the up to 34 year-olds, the share of those concerned about fraud in online banking rose markedly in 2011, by 9 percentage points from 2010.

This age group is usually considered to be internet savvy and spends the longest period of time online. This could be the reason for their increased sensitivity to IT security issues.

### Fears of internet fraud, 2010

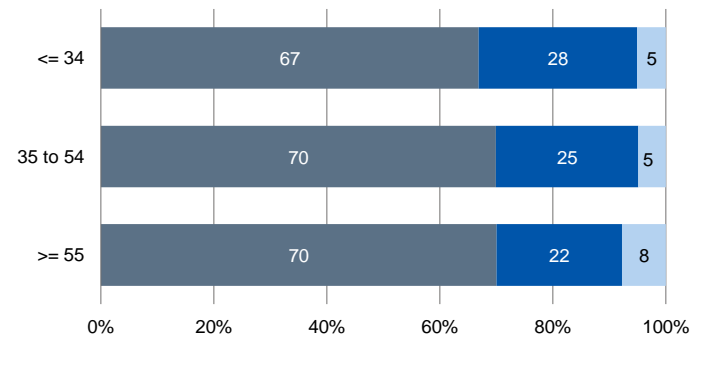
% of German population aged 14 and over, n = 1002 (2010), n = 1006 (2011)



Source: (N)Onliner Atlas 2011

### ... 2011

7



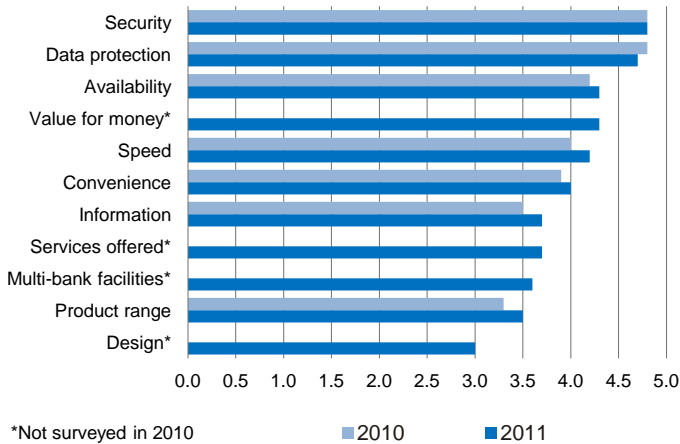


## Growing need for security in online banking

### Considered important by German online banking users

8

Scale [1;5], 1=not important, 5=extremely important, n=1002 (2010), n=1006 (2011)



Source: (N)onliner Atlas 2011

### Growing need for internet security

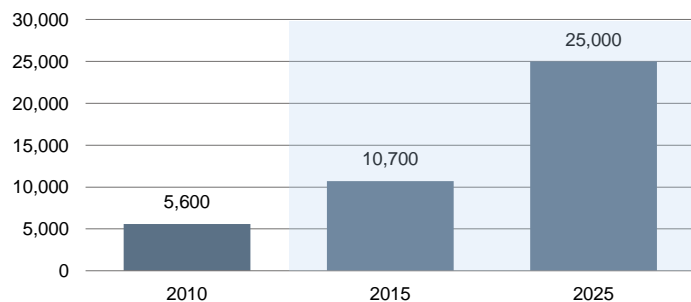
Users' need for "security and data protection" therefore continues to be the most important prerequisite for them to use online banking. Their second most important need is for 24-hour access to their bank accounts via the internet.

Moreover, value for money has recently been mentioned as another important factor for the first time, taking fourth place in the ranking.

### Sales in Germany's IT security market

9

EUR m, cumulative sales



Sources: VDI/VDE, Institut für Gründung und Innovation Uni Potsdam, BMWi

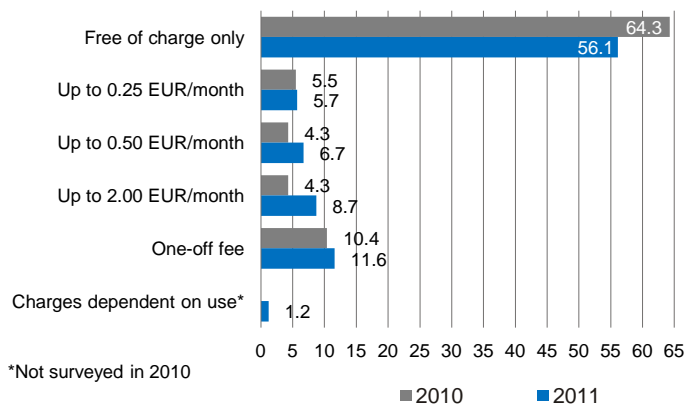
### One man's poison is another man's meat

The rising awareness among the population as regards potential cyber attacks has led to a pronounced increase in sales in the market for IT security. Experts expect sales to increase five times over by 2025. Germany's IT security sector enjoys a good reputation internationally. Besides precision and trustworthiness, it is applauded in particular for its highly qualified personnel.<sup>2</sup>

### Willingness to pay for online banking

10

% of German population aged 14 and over, n=1002 (2010), n=1006 (2011)



Source: (N)Onliner Atlas 2011

### Does greater security and data protection also mean higher costs would be accepted?

Rising security consciousness implies that – for the first time – internet users are becoming more willing to pay for online banking services. More than half of the population (64.3% in 2010) still think online banking should be free of charge. However, roughly one-third said in 2011 they would generally be prepared to pay for online banking (2010: 24.5%).

<sup>2</sup> Booz & Company (2011). Zukunft der Telekommunikation.

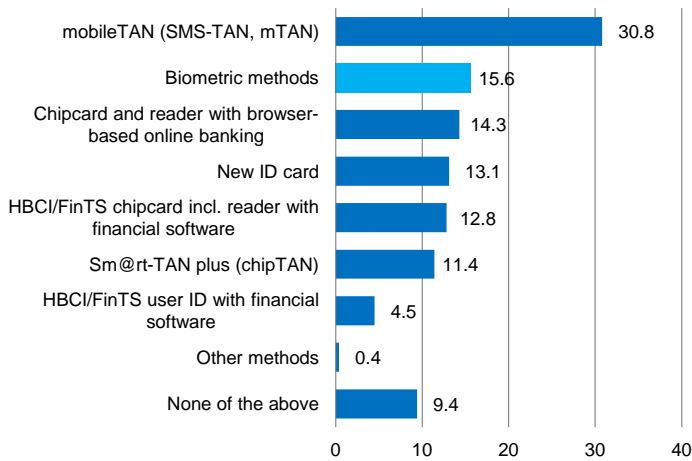


## Growing need for security in online banking

German users accept biometric authentication methods in online banking

11

% of German population aged 14 and over, n = 1006



Source: (N)Onliner Atlas 2011

## Biometrics accepted among internet users

The PIN-TAN method (where the TAN is chosen arbitrarily from a list) and the iTAN method (where a specific TAN is entered as identified by a sequence number) are used to authenticate transactions and remain the most commonly known security technologies in Germany. In the case of the mobileTAN, the bank customer receives the TAN on his mobile phone via text message.

Internet users' growing security consciousness also means greater acceptance of biometric authentication methods.<sup>3</sup> About 16% of Germans said they can imagine biometric procedures being used in online banking. Bank tellers in Japan, for instance, analyse the vein structure in the palm of the customer's hand for biometric authentication. The structure of the vein pattern is measured by using infrared rays.<sup>4</sup> Japanese banks offer their customers various options: bank cards with a chip (with biometric data); magnetic stripe cards with a PIN or magnetic stripe cards with a chip.<sup>5</sup>

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<sup>3</sup> Biometric identification enables authentication of a person on the basis of their personal and individual physical traits. Instead of using keys, passwords or PIN numbers, individuals are identified based upon physiological characteristics such as veins, face recognition or fingerprints.

<sup>4</sup> Already, more than 40 Japanese banks use this method at a total of over 19,000 ATMs.

<sup>5</sup> Grudzien, Waldemar. Biometrie in der Kreditwirtschaft. Association of German Banks (Bundesverband deutscher Banken).

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