

Innovation in banking – are we communicating the value created?

<IR> Banking Network

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Innovation in banking – are we communicating the value created?

Introduction

“Banking is necessary; Banks are not...” These words from Bill Gates¹ accurately summarize the basic need for many banks to reinvent themselves or at least adapt to a world where consumers require better and faster service, often online and mobile, and where organizational cost pressures require constant improvement in processes and applications in order to remain competitive. In a way, this is nothing new, with non-monopolistic industries having felt these demands over time. Perhaps what makes the need more pressing for banks now, is a combination of new regulations, a more arduous and rapidly changing macro environment and most importantly, new enabling technologies.

Given this ‘perfect storm’, it is not surprising that nearly all banks today mention innovation as critical to their long-term strategy – especially in relation to technology development. They also invest billions of dollars in innovation programmes and research and development of new processes and technologies.

So how is innovation related to the Integrated Reporting?

Innovation is addressed explicitly in the International <IR> Framework² (the Framework):

“What differentiates the organization to give it competitive advantage and enable it to create value, such as the role of innovation...” <IR> Framework, para 4.29

“Encouraging a culture of innovation is often a key business activity in terms of generating new products and services that anticipate customer demand, introducing efficiencies and better use of technology, substituting inputs to minimize adverse social or environmental effects, and finding alternative uses for outputs.” Framework, para 2.24

With such a focus on innovation, one would rightly expect that banks would diligently measure and prominently disclose the progress with their innovation efforts. This is true also because under most GAAP, including IFRS and US GAAP, most innovation-related expenditure cannot be capitalized. Moreover, the benefits of these efforts are rarely apparent in terms of increased revenue until one or more reporting periods after the costs have been incurred. The need for

¹ Bill Gates 1994.

² <http://www.theiirc.org/international-ir-framework/>

‘pre-financial’ performance indicators would seem to be a prerequisite for investors to enable them to evaluate banks’ viability and long-term value creation.

Reporting on the role of resources and relationships used and affected by an organization – referred to collectively as the ‘capitals’ – and their contribution to value creation over time, is a fundamental concept in the Framework. Ideally, banks would measure and disclose ‘innovation’ in their integrated report as part of the capitals used and affected by the business.

This paper explores the extent to which such disclosures about innovation exist for banks. We also look to other industries where Research and Development (R&D) is critical to strategy, such as the pharmaceutical, automotive and IT / software industries to get inspiration for good disclosures.

Overall, we find that disclosures around innovation are scarce and when provided, are generally qualitative in nature. We observe that R&D is fundamentally different from innovation and hence R&D disclosures are only partly relevant for banks – this is perhaps one of the reasons why disclosures on innovation are less common as well as less consistent than R&D disclosures.

Nevertheless, we have provided examples of disclosures from various industries that may serve as inspiration for banks seeking to improve their disclosures around their innovation efforts and value created.

This report is prepared based on a desktop review of Integrated Reports, Annual Reports, CSR Reports and corporate websites, supplemented by interviews with investors, analysts and preparers.

Mikkel Larsen, Managing Director at DBS, is the author of this paper, which is informed by discussion with the <IR> Banking Network, which he chairs.

Individuals from the following banks have participated in the <IR> Network:

DBS	New Resource Bank
Deutsche Bank AG	Royal Bank of Canada
FMO	Standard Chartered Bank
Garanti Bank	The World Bank
HSBC Holdings	UniCredit S.p.A.
ING Investment Management	URALSIB Financial Corporation
Itaú Unibanco	Vancity Savings Credit Union
National Australia Bank Limited	

The similarities and differences between ‘innovation’ and ‘research and development’

A simple comparison of the definitions starts to reveal the differences between ‘innovation’ and ‘research and development’.

Research & development: *“investigative activities a business conducts to improve existing products and procedures or to lead to the development of new products and procedures.” Investopedia*

Innovation: *“can be defined simply as a ‘new idea, device, or method’... often also viewed as the application of better solutions that meet new requirements, unarticulated needs, or existing market needs. This is accomplished through more-effective products, processes, services, technologies, or business models that are readily available to markets, governments and society.” Wikipedia*

“Innovation should be understood to include the entire value chain: from R&D to engineering, manufacturing, distribution, sales, marketing, and even facility utilization and investment strategy.” Bloomberg

Disruptive innovation: *“technology whose application significantly affects the way a market functions. An example of a modern disruptive innovation is the Internet, which significantly altered the way companies did business and which negatively impacted companies that were unwilling to adopt it. A disruptive innovation is differentiated from a disruptive technology in that it focuses on the use of the technology rather than the technology itself”. Investopedia*

From the above, it can be observed that whereas R&D, or at least development, has a specific objective in mind (e.g. a cure for a disease), innovation is a discipline where the problem is less well defined (i.e. “new technologies may disrupt our industry”).³

³ Wikipedia defines R&D as the “front end” of innovation and thus has a different perspective than the one expressed in this paper.

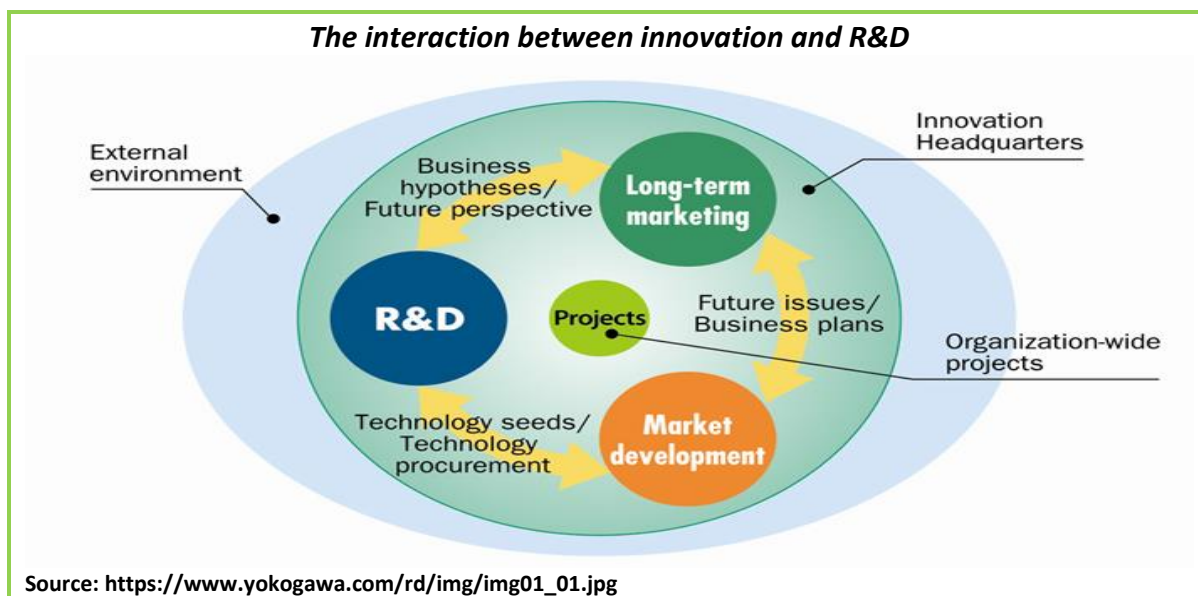
Generally, in the case of innovation, there are at least three unknowns:

1. How and to what extent will technology disrupt our industry?
2. Which of the new technologies will disrupt? This is a problem also experienced in other industries such as the pharmaceutical and IT industry but it is perhaps something banks are less familiar with.
3. How should we approach the disruption? This contrasts to the pharmaceutical industry – where more often than not the disruption is known and the solution is often broadly the development of a new vaccine (which is still a very broad spectrum of course). In banking – and perhaps the automotive industry – it is often not clear whether technology is the right solution and even if it is, how to introduce it.

One may therefore conclude that innovation is a broader discipline than R&D and exhibits a number of differentiating features:

1. It is less well defined in terms of outcome and approach.
2. It has a more pervasive impact on the organisation and its multiple capitals such as human capital, intellectual capital and even social & relationship capital – e.g. ability to work with start-ups.

The diagram below shows one way to illustrate these differences.



So what are the implications of these differences between innovation and R&D? At a minimum, we would not expect that disclosures on R&D expenditure fully reflect investments in innovation. A large investment in innovation may not be perceived to create value, no matter how far down the “development pipeline”. Moreover, measuring what innovation is can be challenging. That said, inspiration from R&D disclosures can be of directional interest to banks as a way to provide more meaningful disclosures in this area.

Innovation: Value proposition to banks

In the introduction, we indicated why banks are investing billions in innovating the way banking products are being delivered to customers. The key drivers include:

1. Lower income from “traditional banking” in a very low interest rate environment
2. A more austere banking regulatory environment that reduces income and increases cost
3. A change in business models where disruptors enter the industry e.g. Alibaba Pay taking over a significant share of the payment side of online transactions, but also from start-ups
4. New technologies that make barriers to entry lower for new players outside the banking industry to compete more easily with existing banks, where regulation allows.

Further, innovation spend is often not an item that can be capitalized under current GAAPs such as US GAAP and IFRS. This inability to capitalize innovation spend arises from some known issues:

- Internally developed processes and products can **only be capitalized under IFRS when strict criteria are met**. Effectively, this restricts the cost that may be capitalized to those relating only to the final development phase.
- The cost of innovation includes spending on training, human resource management and many other initiatives that build culture and capability but are **not captured systematically** in the same way R&D costs may be. The costs may be accounted for across several parts of the organisation, making them harder to track, both individually and in total.

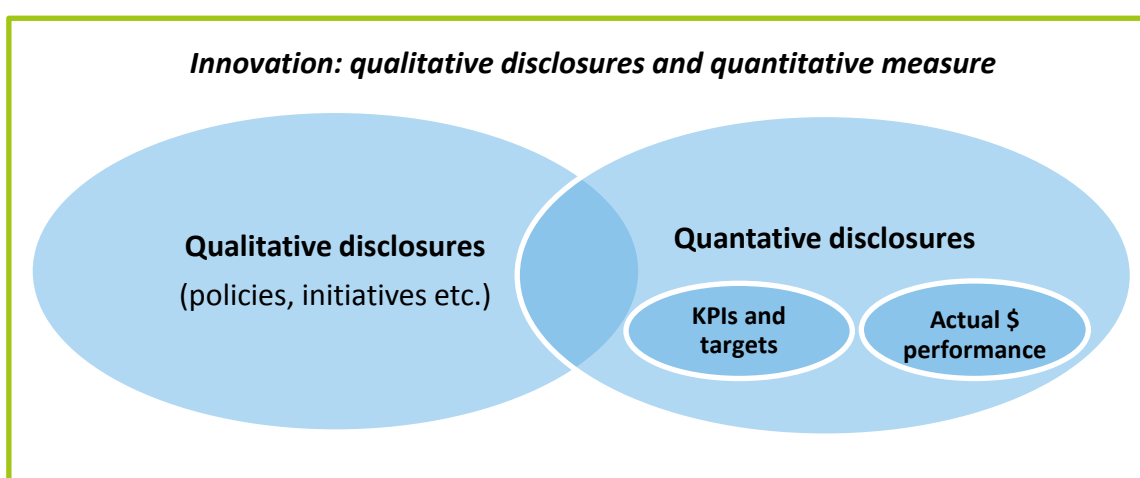
These accounting challenges mean that banks will need to find other ways to reflect the value of innovation in their integrated reports.

Reporting on R&D and innovation in principle

In this section we explore what stakeholders consider to be relevant disclosures around innovation. In the following section, we will compare these against banks' actual disclosures.

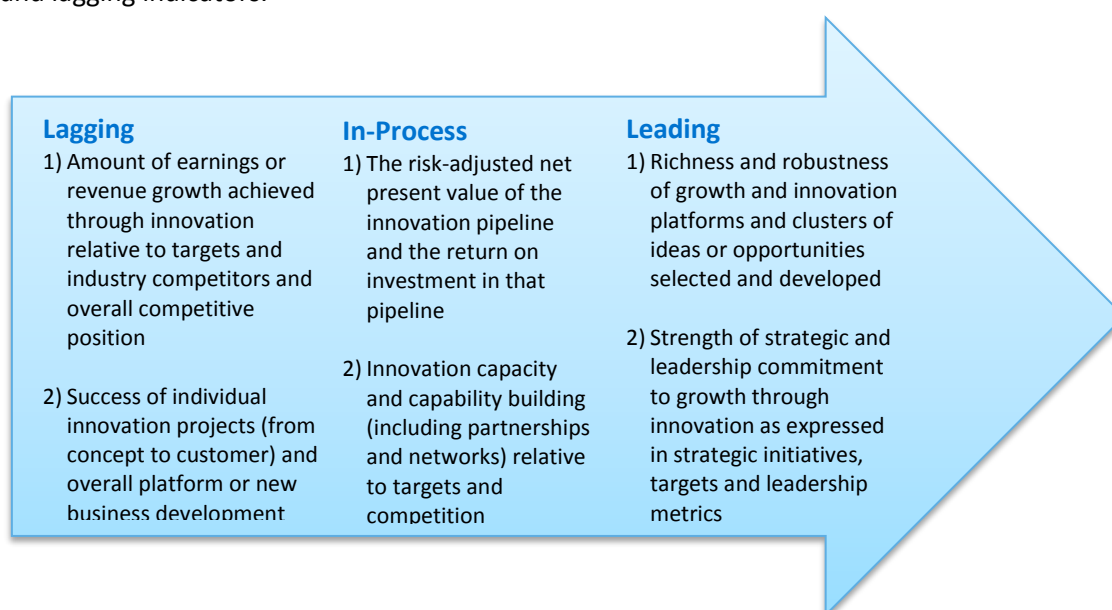
The <IR> Framework does not suggest specific performance indicators (PIs), measurement methods or the disclosure of individual matters, nor does it suggest which of the six capitals innovation would be part of or relevant to.

It is for an organization to decide, based on its specific circumstances, appropriate qualitative disclosures and quantitative measures of innovation.



An approach to quantitative disclosure – Ronald Jonash, Monitor Group

It is worth noting this approach to quantitative disclosure, which distinguishes between leading and lagging indicators.



Qualitative disclosures

The Framework encourages, as a minimum, disclosures that clarify who in senior management is responsible for the company's innovation efforts.

“The responsibility those charged with governance take for promoting and enabling innovation ...” <IR> Framework, para 4.9

Other generally relevant qualitative disclosures may include:

1. Strategies for innovation
2. Policies around the development of innovation
3. An organization's approach to ensuring employees are contributing to innovation projects

Performance indicators

There are many performance indicators (PIs) used to measure, manage and report on innovation. The company Innovation Management Inc., founded by Ronald Jonash, proposes the following list:

- Increase in value of ideas at start of innovation pipeline
- Number of new ideas implemented
- Risk-adjusted net present value of innovation pipeline
- Number of projects abandoned
- Number of successful handoffs
- Speed to market
- Number of new offerings launched

Actual dollar value of innovation

Anecdotal feedback from investors/analysts and preparers interviewed for this report suggests that qualitative disclosures are currently the primary focus, despite their limitations such as biased reporting and lack of comparability amongst banks. Where quantitative measures are used, the PIs chosen give a directional indication of the value of innovation.

So how could the value of innovation possibly be measured?

A report issued by Cranfield University and CIMA⁴ outlines the methods often employed to measure the value of intellectual capital, including market based approaches, Tobin's Q, Calculated Intangible value and the Baruch Lev Method.

⁴ http://www.cimaglobal.com/Documents/ImportedDocuments/tech_techrep_understanding_corporate_value_2003.pdf

Most of these approaches suffer from at least two weaknesses when applied by banks:

1. They do not identify specific methods for measuring the subset of the intellectual capital relating to innovation.
2. They are developed mainly for companies outside financial services with a larger tangible capital base and smaller financial capital.

For these reasons, in this paper we will not dwell upon the existing models but recognise that they have some weaknesses when applied in the banking industry. However, this should not necessarily deter leading banks from experimenting with measuring the monetary value of innovation, if this is useful to better understand value creation.

Deciding what to report

When making the final determination about what type of disclosures to provide, the following questions may be useful to consider:

- Which stakeholders am I reporting to and what are their information needs?
- Which measures can the bank directly impact and therefore take action to improve?
- Which PIs capture the desired behaviour changes in employees?
- Is the information accessible and reliable?
- Is it possible to devise meaningful targets and PIs?

It is worth noting the recommendation from Tim Bosco, Head of Innovation Strategy at Brown Brothers Harriman around disclosing the value of Fintech related innovation efforts⁵. One of his main observations is that the most valuable innovation comes from incremental improvements originating from customer feedback, and from employees working with data systems. That contrasts sharply with a popular perception that the value of innovation comes most often from the exploration and understanding of disruptive technologies.

⁵ <https://www.finextra.com/videoarticle/1396/measuring-the-value-of-innovation>

Reporting on R&D and innovation in practice

Our analysis consisted of three areas.

The **first part** of the analysis was a desktop review of 45 annual reports, integrated reports, sustainability reports, CSR reports and websites of companies with the largest R&D budgets and active in sectors where R&D and/or innovation act as a significant driver for differentiation and hence are material to the company. The following industries were selected:

- Banks
- Pharmaceutical
- Technology
- Automotive

The names of the companies in the analysis and further detail around the selection criteria are provided in Appendix A (page 28).

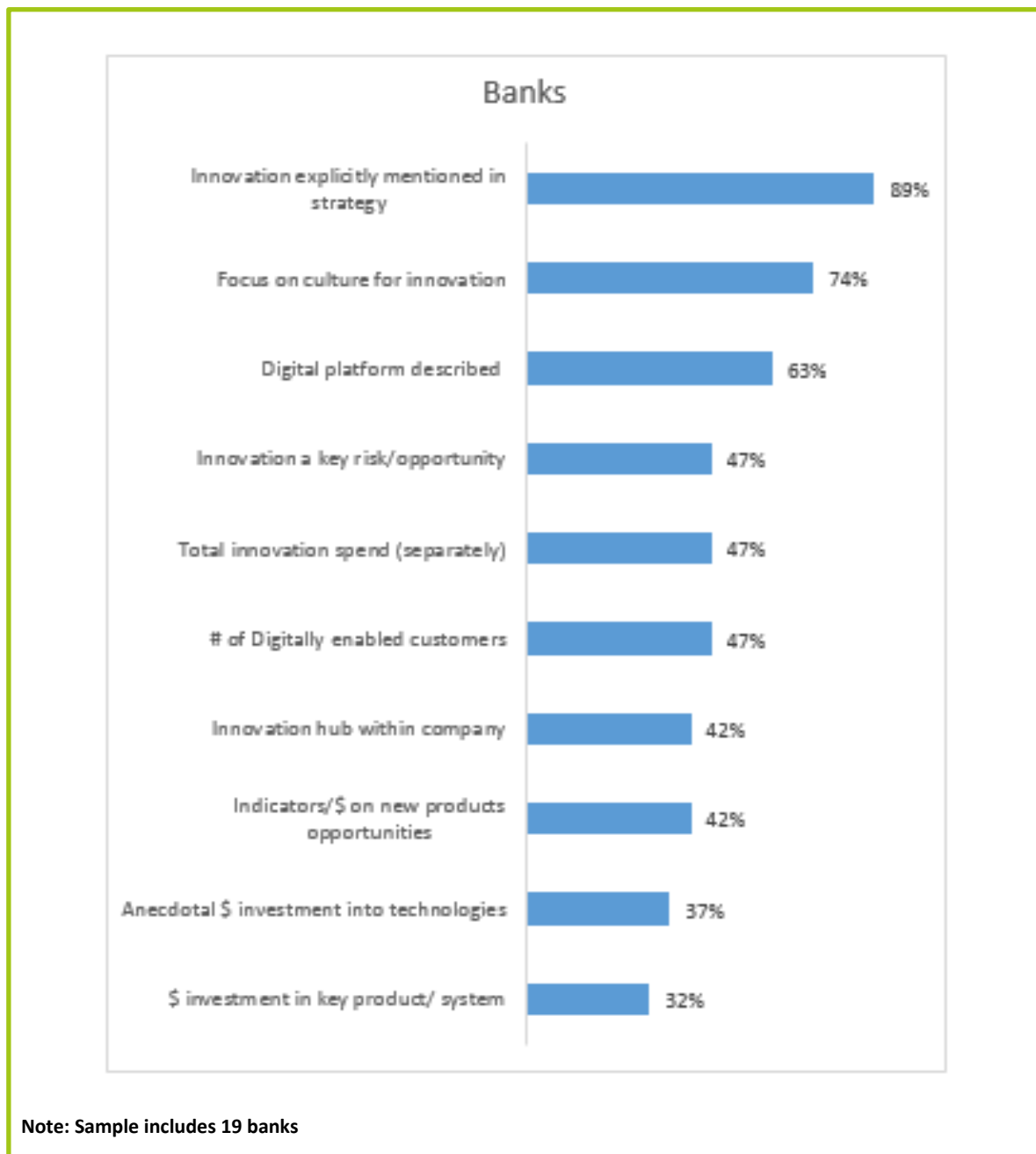
The **second part** of our analysis included individual interviews with two investors and one prudential regulator to understand their views on innovation disclosures. The questionnaire can be found in Appendix B (page 30).

The **third part** included interviews with three banks to understand their current innovation disclosures, the importance they placed on better articulating the value of their investment in innovation, and the obstacles to providing relevant disclosures. The questionnaire can be found in Appendix C (page 32).

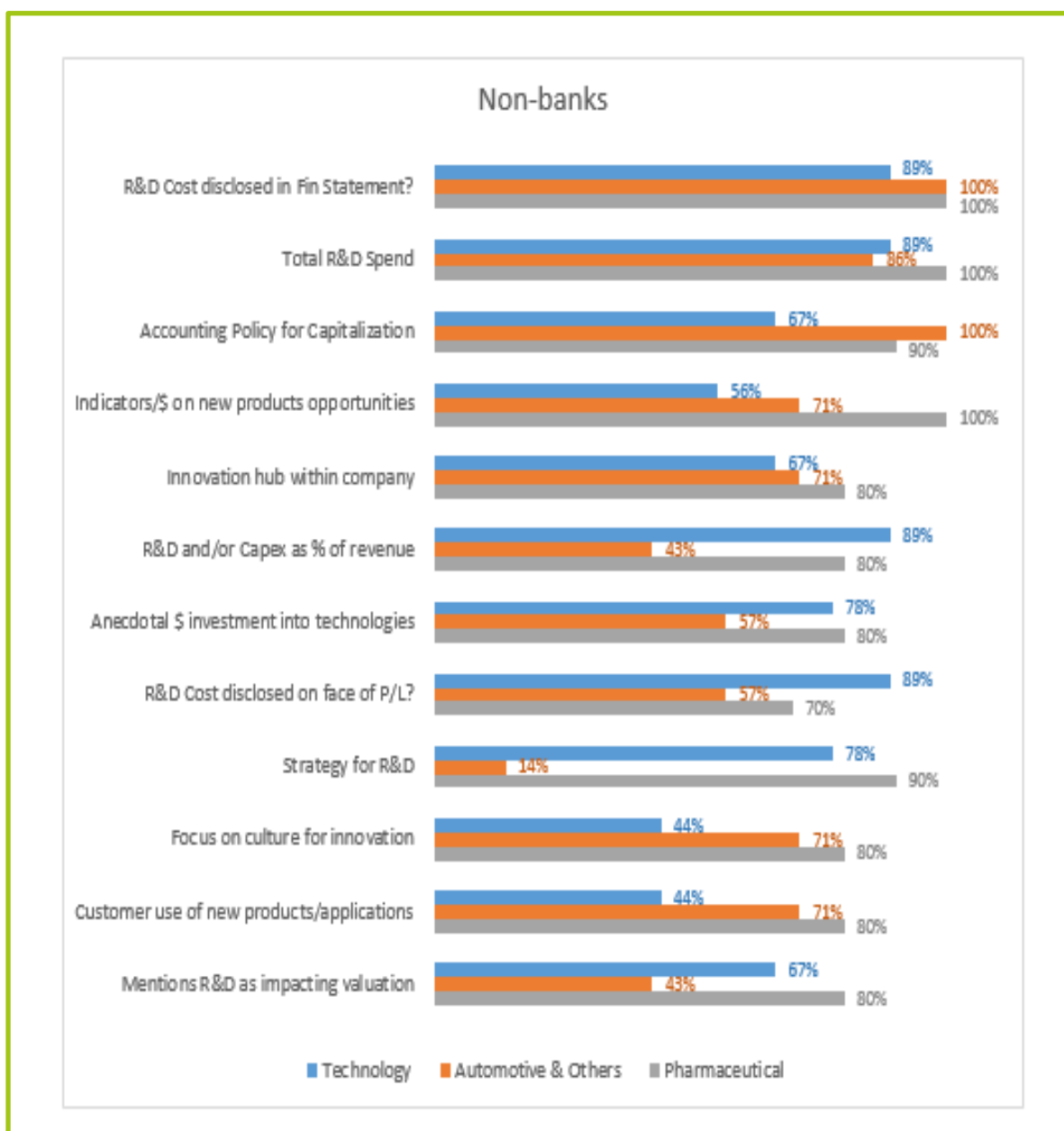
Common Disclosures

The graph below illustrates the types of disclosures most frequently used by banks and the chart on the next page shows the disclosures by companies in the other industries, including technology, pharmaceutical and automotive.

Frequency of disclosures in banks



Frequency of disclosures in other industries



Note: Sample includes 26 non-banks: 9 technology, 10 pharmaceutical and 7 automotive & other companies

The main observations from the analysis

- Banks' disclosures are mainly qualitative, focusing on strategy and description of initiatives, with little disclosure around their spending on innovation, performance indicators and targets. This may derive from the fact that banks tend not to explain how they measure success for innovation.

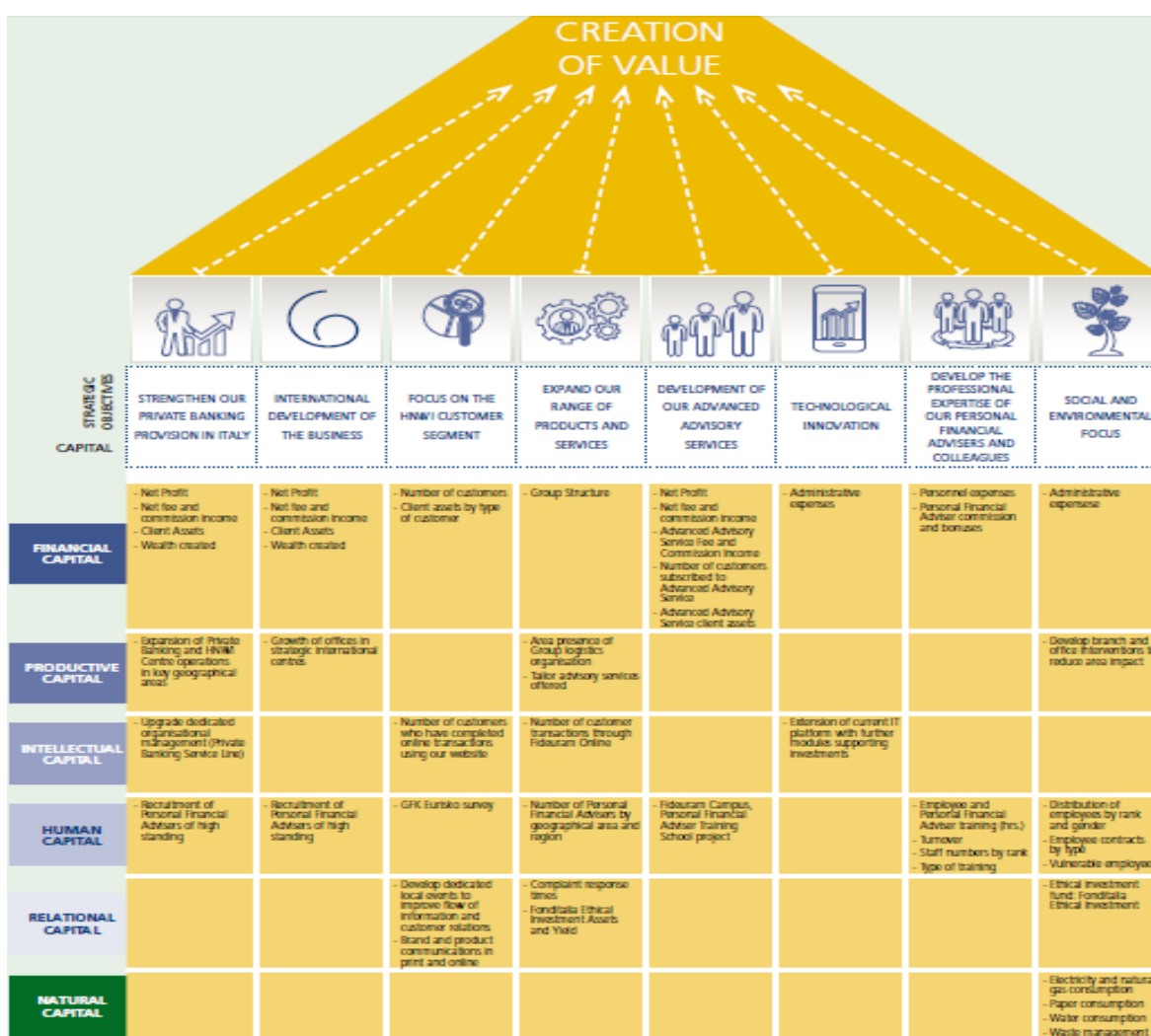
- There are significant similarities in how some banks explain the risk and opportunities to their business model and how companies like GE (see illustration, page 23) and some automotive companies report. In all these cases the introduction of new technology fundamentally changed the business models. Hence the disclosures aim to more comprehensively explain the impact on culture, service channels and competitive landscape rather than focusing on the success of specific new products or services.
- The importance of building an innovative culture is reflected in the fact that this is the second most disclosed item by banks.
- Banks are not trying to replicate traditional R&D disclosures around pipeline of initiatives, key milestones and likelihood of success. Instead performance indicators (where given) are focused on the impact of their fintech in terms of the number of clients served on-line and the closure of branches.
- There is little explanation of governance principles applying when working with start-ups, and the ownership management of any intellectual property and/or capital that may result from such collaborations.
- The accounting policies and disclosures related to innovation in the financial statements are less detailed for banks than for pharmaceutical and IT companies. Better insight into what to capitalize, amortization periods and which costs are included in R&D cost would be helpful. More broadly, banks make little attempt to amalgamate all costs related to innovation and they are often recorded in the profit/loss statement in multiple line items including direct IT cost, amortizations and staff cost. In comparison, a commonly used measure for the investment in R&D / innovation by other industries is 'R&D Cost/Revenue'.
- A surprisingly large number of banks dedicate a part of their websites to explanation around their innovation initiatives. However, the websites of IT and pharmaceutical companies are far more developed in this area (when also considering R&D disclosures).
- Banks generally do not have a comprehensive inventory of the different innovation projects they are undertaking. Disclosures are focused on those technologies that are being explored rather than those the banks have chosen not to invest in. This makes it harder for investors to get a clear understanding of the banks' strategy or the focus of banks' innovation.
- Banks, more often than other industries, seem to express innovation as an opportunity rather than purely a risk. Perhaps banks remain more optimistic that they will be able to use new technologies to their competitive advantage. That said, banks less frequently describe the existence of 'innovation labs'. It is indeterminable whether this is simply a result of fewer disclosures or the non-existence of such labs with many banks. The latter would not be surprising as the use of 'Innovation labs' as a separate function is a relatively new phenomenon with banks.

Illustration of current disclosures on innovation

Below are some illustrations of current disclosure practices worth noting to inform ongoing progress with innovation disclosures.

Banca Fideuram - Strategy and Intellectual Capital

Banca Fideuram offers a systematic way to show which capitals are most important to its strategic objective of 'Technological Innovation'. The disclosure highlights the point made previously that most of the cost of Banca Fideuram's innovation efforts are reflected in the income statement under 'administrative expenses', which clearly does not reflect the total value of the efforts.



Source: Fideuram - Intesa Sanpaolo Private Banking Integrated Annual Report 2015, Page 55

BBVA – KPIs

BBVA's KPIs are focused on the impact of innovation and technology on its customers rather than the culture created internally.

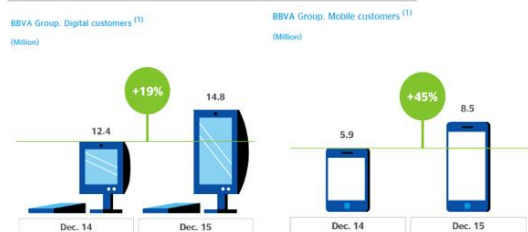
Innovation and technology: the digital transformation

BBVA has been aware for some years that transformation involves adapting banking services to people's real lives. Consumers today rate convenience very highly, i.e. being able to make informed and well-advised decisions through face-to-face, remote by phone or email or digital channels, depending on their needs. This is demonstrated by the major investment in innovation and technology that BBVA has been making over recent years, with an annual average of around €800m since 2011.

1) Increase in the digital customer base

BBVA is continuing to expand the number of customers who interact with the Bank through digital channels. As of December 31, 2015, the Group had 14.8 million digital customers, that means a penetration of 33% and 19% up on last year, of whom 8.5 million are in mobile banking (up 45% on 2014).

In 2015 the digital customer base continued to increase



Source: BBVA in 2015, Page 110-112

2) Transformation at the branch offices

BBVA's branch network has taken a leading role in the Bank's growth and transformation. It aims to adapt to the profile of customers by using a mix that combines face-to-face, remote or digital service in a 360° model. Beginning in November 2015, the managers of BBVA Contigo in Spain have been working integrated into the branch network teams. Branches also assist customers who have any queries so they can learn about the tools that will make their transactions easier.

In Mexico, the branch office rehabilitation and upgrading project, which has reached 1,400 branch offices in 2015, becomes a reality with the Bancomer Tower. The change in the comprehensive business model drives technological innovation with a view to improving customer experience.

Today, flexibility and convenience make mobile banking and the Internet the most highly rated channels among BBVA customers. But customers do not have to choose between self-service and the face-to-face channel: they can select face-to-face, remote or digital banking according to their needs at any given time. The new distribution model boosted by digital transformation means that activity in the branch, as measured by the number of transactions, continues to decline.

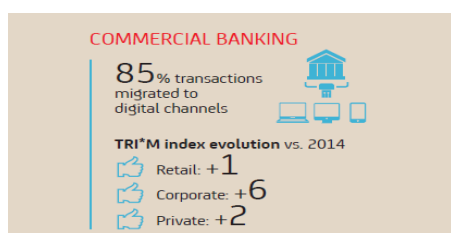
BBVA Spain. Branch activity

(Millions of transactions)

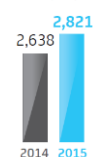


UniCredit – KPIs

UniCredit, like BBVA, focuses mostly on performance indicators relating to customer experience. Interestingly, UniCredit adds a KPI relating to its 'TRI*M Index',⁶ which is a measure for the strength of the relationship between a specific customer group and their bank.



Active online users (000)



Source: UniCredit 2015 Integrated Report, Page 32, 33 & 43

NUMBERS (thousands)	2013	2014	2015
Individuals with access to electronic banking <i>PeKao24</i>	2,447	2,661	2,899
Individuals with access to mobile banking	373	596	1,015
Business clients with access to electronic banking	224	241	248
Business clients with access to mobile banking	7	14	18

Our innovative customer-centric approach resulted in a TRI*M index² rating of 66, 10 points higher than our nearest competitors

⁶ <http://www.tnsglobal.com/what-we-do/by-expertise/customer-strategies/trim-customer-relationship-assessment>

BNDES – Employees trained on innovation

BNDES highlights the training performed internally to promote a culture of innovation in its largely qualitative disclosures on innovation.

INNOVATION

We believe innovation is essential to improve the competitive positioning of Brazilian companies, and therefore the theme is considered a strategic priority for the institution. Innovation helps create skilled jobs and increase production efficiency, generating economic and social value for the country, and it can be supported through different financial instruments, such as subscription of shares, onlendings to financial agents and non-reimbursable funds.

In 2015, disbursements on innovation reached R\$ 6 billion, accounting for 4.4% of our total disbursements. The volume of released resources showed no significant change compared to 2014, but participation in the total amount released by BNDES increased 37.5%.

Training in innovation

Internally, we have stepped up our training in innovation. In 2015, 147 employees were trained in the BNDES Innovation Line and BNDES FUNTEC, two of our most important support instruments in this area. In addition, important names in the field took part in internal events to discuss relevant issues concerning innovation, such as physician and neuroscientist Miguel Nicolelis, professor Mariana Mazzucato, and Jaakko Tammela and Luis Alt, two reference points of the Brazilian design thinking.

Innovation support instruments

Among the products to support innovation, the BNDES Innovation Line is the main instrument. This low-cost line of credit aims to support increased business competitiveness through investments in innovation applied to business strategies. These investments may include innovation in products, processes, marketing, besides improving skills and technical expertise in the company.

Also worthy of mention is the program **BNDES Innovative MSME**, aimed at increasing the competitiveness of MSMEs, financing the investments required to

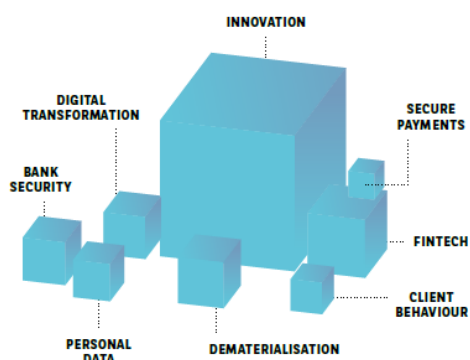
Further launches

Complementing support for innovation, we created new financing instruments in 2015, such as the BNDES Exim Innovative Company Pre-Shipment Line and the BNDES Hybrid Securities for Innovation Support program (BNDES THAI). The former seeks to strengthen financial support for innovative companies that take on the challenge to export, providing special conditions to improve their competitiveness in foreign markets. The latter is an instrument of participative subordinated debentures, which proposes to share the risk and return of innovation projects of large companies, especially in the later stages of the research and development (R&D) cycle, such as the scaling of first-time processes or the development of new products. 🍷

Source: BNDES Annual Report 2015, Page 38-40

BNP Paribas – Innovation as a ‘material matter’

BNP Paribas identifies innovation as a material matter and discloses various examples of how continuous innovation is at the heart of the bank’s transformation.



QUESTION 3

WHAT WILL THE BANK OF THE FUTURE LOOK LIKE?

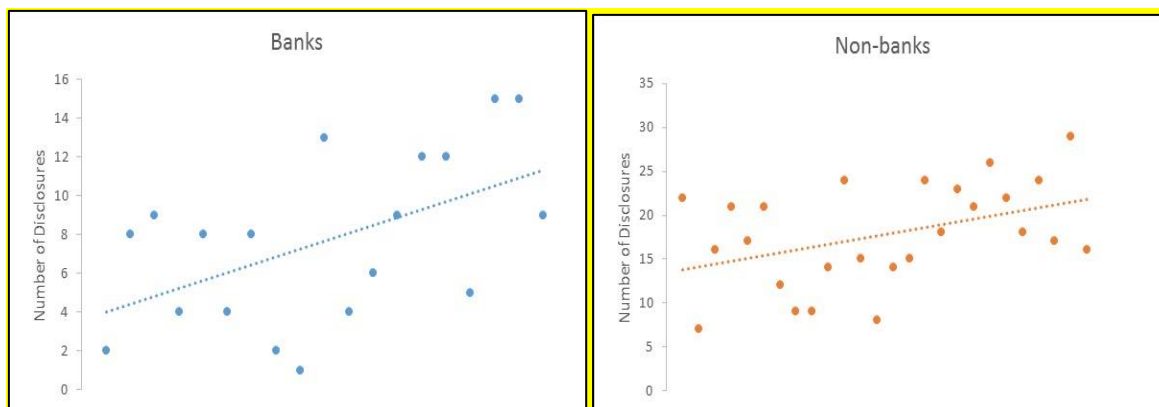
Digitalisation and disintermediation are revolutionising our relationship with banks. We are increasingly mobile, informed, and more demanding, so we expect banks to offer new services and a new kind of relationship. How are banks adapting to this new world order? How are they managing their transformation?

It is thanks to innovation that banks are meeting the new demands of clients and the marketplace.

Source: BNP Paribas 2015 Annual Report, Page 32, 50-58

Number of innovation-related disclosures by company

We also considered variances in the number of innovation-related disclosures provided as part of our analysis.



Note: Each data point represents the number of innovation-related disclosures provided by a company. Samples include 19 banks and 26 non-banks including: 9 technology, 10 pharmaceutical and 7 automotive & others

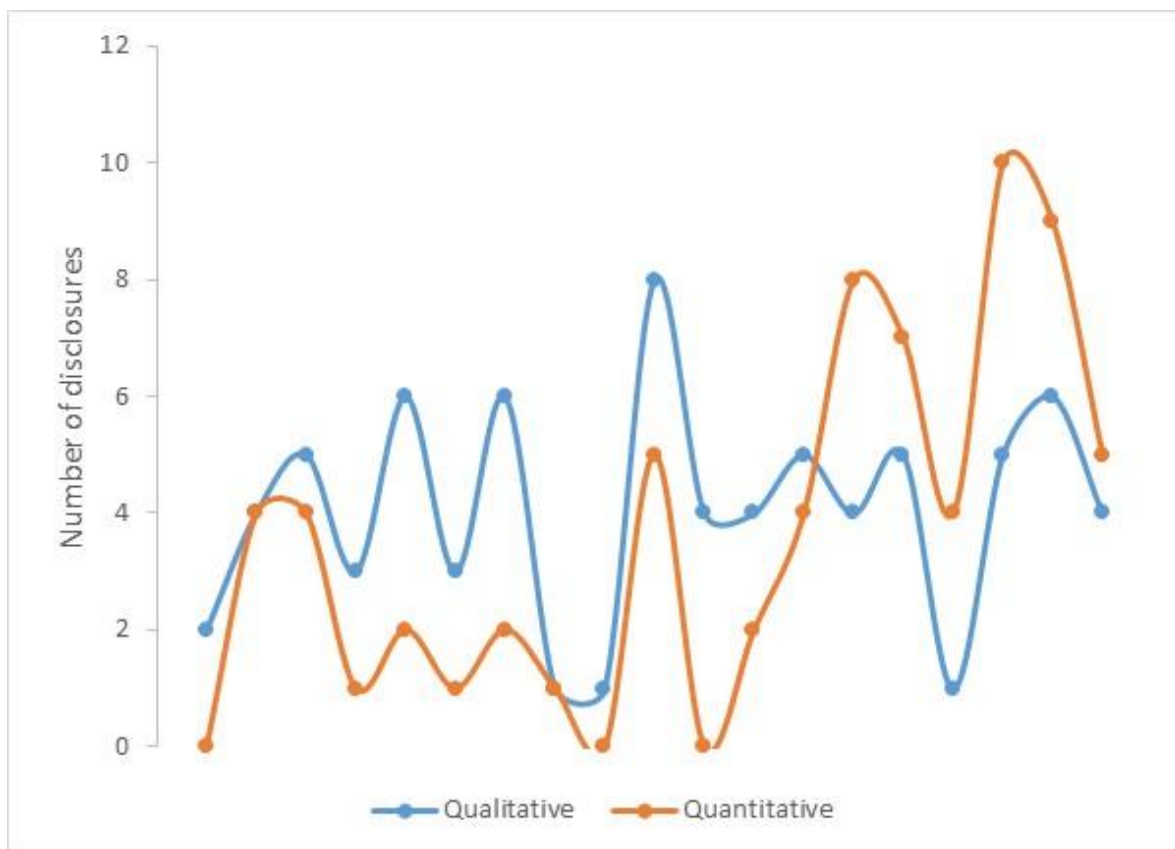
The main observations about this range of disclosures:

- Banks generally provide fewer disclosures⁷ on innovation and R&D than peers in other industries. Although this is not necessarily an indication of the quality of disclosures.
- The range of disclosures (measured by the standard deviation) is slightly lower for banks than in other industries. Nevertheless, the surveyed banking industry is represented by a small number of banks with a large number of disclosures and a much larger proportion of banks with limited information. This is perhaps not surprising given that innovation as a 'material issue' is still a relatively new phenomenon compared to other traditional banking risks and opportunities. Banks may simply not have found the right format and performance indicators to reflect their innovation efforts.

⁷ This is measured simply by the topics covered rather than the depth of disclosures.

Correlation between qualitative and quantitative disclosures

We also considered whether there was a correlation between those banks who provided more comprehensive qualitative disclosures around innovation strategy, initiatives etc. and their level of quantitative disclosures including KPIs and targets.



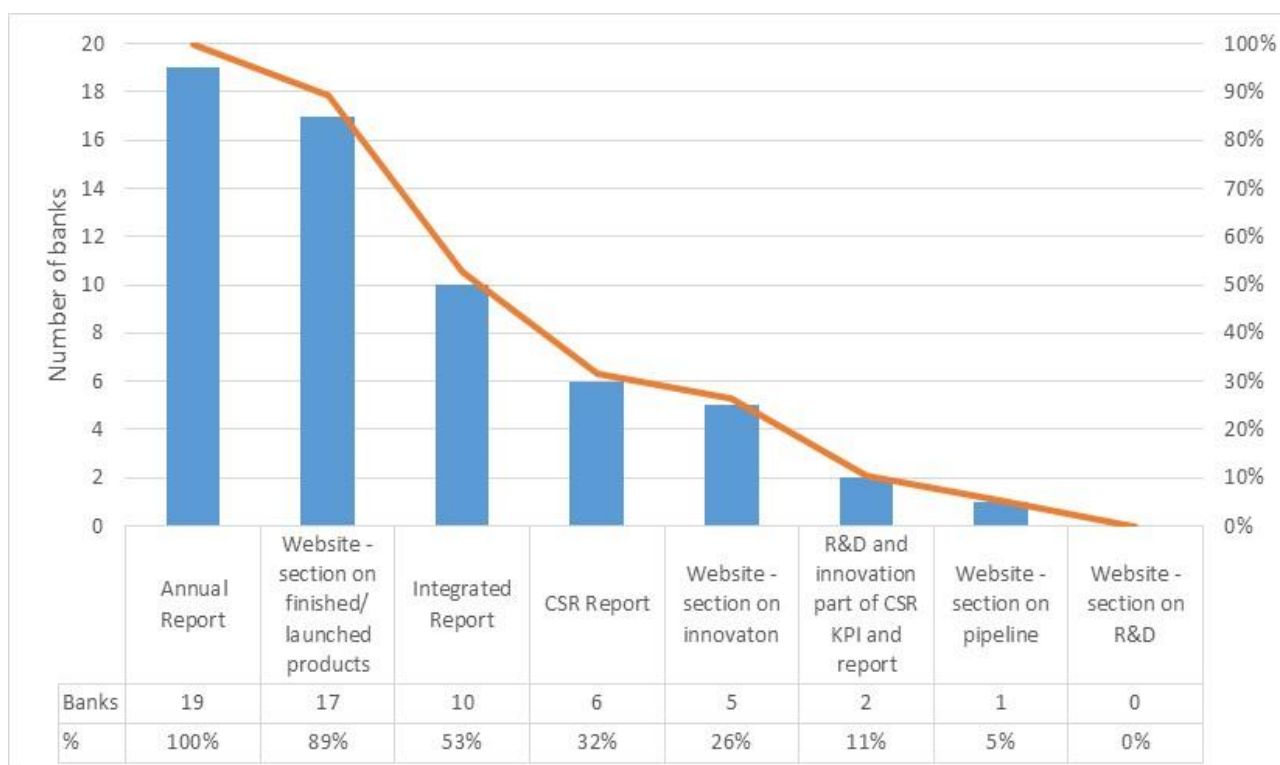
Note: Each data pair represents the number of qualitative and quantitative disclosures provided by each of the 19 banks surveyed.

We observed a correlation between the number of qualitative and quantitative disclosures, suggesting that those banks who communicate qualitative information, such as their innovation strategy, are also those who attempt to measure quantitatively the success of their efforts to innovate.

Location of disclosures

We briefly looked at what banks chose to disclose around innovation and R&D compared to other companies.

Communication channel for disclosures on innovation and R&D



We noted that:

- All banks (100%) have some level of information on innovation in their Annual or Integrated Report. This information is often enhanced in banks' Integrated Reports (where these are issued separately from the Annual Report).
- About 90% of banks dedicate part of their website to explain their innovation efforts and this information is often in more depth than what is reported in the Annual and Integrated Report. This observation seems logical given the fast pace at which new technologies and solutions are being explored. An annual update may commonly be regarded as insufficient to communicate banks' initiatives in a timely way.
- Few banks choose their CSR Reports as a medium for reporting about innovation. While Fintech innovation may clearly help CSR efforts (e.g. where technology creates new viable business models to customers not afforded banking services before), innovation is seen as a strategic issue rather than a separate CSR initiative.

Disclosures from other industries

Amazon – Accounting Policies

Amazon’s reporting provides detail around their technology costs and what they comprise.

Technology and Content

Technology costs consist principally of research and development activities including payroll and related expenses for employees involved in application, production, maintenance, operation, and platform development for new and existing products and services, as well as AWS and other technology infrastructure expenses. Content costs consist principally of payroll and related expenses for employees involved in category expansion, editorial content, buying, and merchandising selection. Digital media content costs related to revenue recorded gross, including Prime Video, are included in cost of sales.

We seek to invest efficiently in several areas of technology and content so we may continue to enhance the customer experience and improve our process efficiency through rapid technology developments while operating at an ever increasing scale. Our technology and content investment and capital spending projects often support a variety of product and service offerings due to geographic expansion and the cross-functionality of our systems and operations. We expect spending in technology and content to increase over time as we continue to add employees and technology infrastructure. The increase in technology and content costs in absolute dollars in 2015, 2014, and 2013, compared to comparable prior year periods, is primarily due to increased spending on technology infrastructure principally allocated to our AWS segment, and an increase in payroll and related costs associated with expanding our products and services.

Technology infrastructure costs consist of servers, networking equipment, and data center related depreciation, rent, utilities, and payroll expenses. These costs are allocated to segments based on usage. In 2015, 2014, and 2013, we expanded our technology infrastructure principally by increasing our capacity for AWS service offerings globally, compared to the comparable prior year periods. Additionally, the costs associated with operating and maintaining our expanded infrastructure have increased over time, corresponding with increased usage. We expect these trends to continue over time as we invest in technology infrastructure to support increased usage.

The increase in payroll and related costs is primarily due to the expansion of new and existing product categories and service offerings, including AWS, and initiatives to expand our ecosystem of products and services.

Source: Amazon 2015 Annual Report, Page 29

IBM – Approach to Intellectual Property

One interesting feature of IBM’s disclosure is the idea of differentiating its investment in R&D into ‘strategic imperatives’ and other investments.

Research, Development and Intellectual Property

IBM’s research and development (R&D) operations differentiate the company from its competitors. IBM annually invests approximately 6 percent of total revenue for R&D, focusing on high-growth, high-value opportunities. IBM Research works with clients and the company’s business units through global labs on near-term and midterm innovations. It contributes many new technologies to IBM’s portfolio every year and helps clients address their most difficult challenges. IBM Research also explores the boundaries of science and technology—from nanotechnology and future systems, to big data analytics, secure clouds and advancing the world’s first cognitive computing platform, IBM Watson.

In 2015, IBM was awarded more U.S. patents than any other company for the 23rd consecutive year. IBM’s 7,355 patents awarded in 2015 position the company to compete and lead in the emerging opportunities represented by big data and analytics, security, social and mobile technologies. These inventions will advance IBM’s cloud platform and the new era of computing in which machines will learn, reason and interact with people in more natural ways.

The company continues to actively seek intellectual property (IP) protection for its innovations, while increasing emphasis on other initiatives designed to leverage its IP leadership. Some of IBM’s technological breakthroughs are used exclusively in IBM products, while others are licensed and may be used in IBM products and/or the products of the licensee. While the company’s various proprietary IP rights are important to its success, IBM believes its business as a whole is not materially dependent on any particular patent or license, or any particular group of patents or licenses. IBM owns or is licensed under a number of patents, which vary in duration, relating to its products.

- Launched Bluemix, the company’s cloud Platform-as-a-Service for the enterprise.
- Invested to globally expand the SoftLayer cloud datacenters.
- Invested to bring Watson’s capabilities to the enterprise and to build a partner ecosystem, effectively creating a market for cognitive computing.
- Introduced cloud application innovations around Watson Analytics and Verse.
- Launched POWER8, and building the OpenPOWER consortium.
- Formed a partnership with Apple for enterprise mobility, with Twitter for big data, and with SAP and Tencent for cloud.

Research, Development and Engineering

Research, development and engineering (RD&E) costs are expensed as incurred. Software costs that are incurred to produce the finished product after technological feasibility has been established are capitalized as an intangible asset.

Growth of IBM Strategic Imperatives

IBM’s strategic imperatives grew by 26 percent and generated \$29 billion last year. That represented 35 percent of IBM’s total revenue.

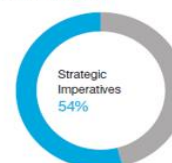
	Revenue Growth Yr/Yr
Analytics	16%
Cloud	57%
Mobile	250%
Security	12%
Social	21%

Revenue growth rate is at constant currency and excludes divested businesses. Overlap in strategic imperatives primarily reflects solutions delivered via Cloud.

Investment

IBM prioritizes investments in research and development, capital and acquisitions, and those investments are increasingly directed toward strategic imperatives.

2015 Total Investment: \$13 billion



Source: 2015 IBM Annual Report, Page 9, 28, 50, 86

Google – KPIs

Google provides more traditional R&D related disclosures.

Research and Development

The following table presents our R&D expenses, and those expenses as a percentage of revenues, for the periods presented (in millions):

	Year Ended December 31,		
	2013	2014	2015
Research and development expenses	\$ 7,137	\$ 9,832	\$ 12,282
Research and development expenses as a percentage of revenues	12.9%	14.9%	16.3%

R&D expenses consist primarily of:

- Labor and facilities-related costs for employees responsible for R&D of our existing and new products and services;
- Depreciation and equipment-related expenses; and
- Stock-based compensation expense.

Source: Google Inc. 2015 Annual Report (10-K), Page 32

General Motors – Disruptive Impact on Strategy

General Motors discloses that it expects to achieve a specifically defined margin over the medium term from new technologies, effectively committing the company to a target for innovation.

Our strategic plan includes several major initiatives that we anticipate will help us achieve 9% to 10% margins on an EBIT-adjusted basis (EBIT-adjusted margins, calculated as EBIT-adjusted divided by Net sales and revenue) by early next decade: earn customers for life by delivering great products to our customers, leading the industry in quality and safety and improving the customer ownership experience; lead in technology and innovation, including OnStar 4G LTE and connected car, alternative propulsion, urban mobility including ride and car sharing, active safety features and autonomous vehicles; grow our brands, particularly the Cadillac brand in the U.S. and China and the Chevrolet brand globally; continue our growth in China; continue the growth of GM Financial into our full captive automotive financing company; and deliver core operating efficiencies.

CONNECTIVITY:

BEYOND THE CAR

We live in an age of seamless connectivity. For most of us it's hard to imagine not being in constant touch with family, friends, work, information and entertainment — whenever we want to, wherever we are. And at GM we're finding more and better ways to make your car an integral part of it all. Our 20 years of experience with OnStar have certainly helped us take the lead in this area. And as we continue to expand the possibilities of the connected car, we're also expanding its benefits to our customers — from services like OnStar Smart Driver that can tell them how well they drive and give them the opportunity to anonymously seek discounts from insurance companies, to proactive service alerts that can flag potential problems before they happen.

Our OnStar-designed RemoteLink mobile app literally makes your vehicle an extension of your mobile device — letting you do everything from remotely starting the engine and unlocking the doors, to sending trip routes to the car and customizing your Wi-Fi settings.

Source: General Motors Company 2015 Annual Report, Page 16 and 30

General Electric – New Business Model and KPIs

At General Electric 'GE Digital' will fundamentally change the company's business model and thus the company provides an in-depth analysis of how it intends to go about transitioning to the new model.



Source: GE 2015 Integrated Report, Page 32 & 33

What investors and other stakeholders want

Analysts' reports

We reviewed analyst reports from Nordea for the 45 companies analysed. We found that while only one analyst report on banks specifically mentioned the importance of innovation, 80 - 100% of analyst reports for IT and pharmaceutical companies discuss R&D and innovation. For automotive companies, a little less than half of analysts spoke about innovation.

This suggests perhaps that despite the feedback from investor and analyst interviews, in reality, innovation still does not feature strongly in analysts' recommendations for stocks of financial companies.

Anecdotal feedback from investors

Below are some quotes that provide anecdotal evidence of some investors' and analysts' feedback:

"I think innovation is a culture as much as a process. But it might be useful, for example, to see where the bank thinks it is in different processes, e.g. Payments – ultimate goal is frictionless payment by mobile phone – how far progressed are we on this? How fully automated is a credit card application?"

Another investor focused on the importance of innovation to reduce the cost base as a prerequisite of a successful new banking business model:

"In a lower for longer interest rate environment, there is limited scope to increase net interest margin (NIM). Conduct risks make it harder to earn fees perhaps. So reducing costs is a key focus, and one aspect of that is moving customers onto electronic platforms."

Regulators' Perspective

Regulators are in a privileged position in that they have access to more information than is generally made available to the public via for example, integrated reports.

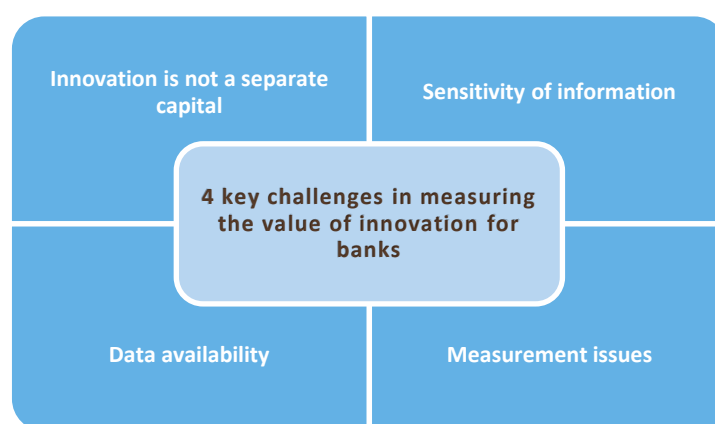
In conversation with a prudential regulator, we observed that whilst no specific disclosures were mandated, banks' approaches to innovation were now featuring more prominently on the agenda for meetings by regulatory teams with banks. The source also highlighted the Financial Stability Board's recent decision to examine whether technological changes presents systemic risk to banks⁸.

⁸ <https://www.ft.com/content/d6813cba-dd55-11e5-b072-006d8d362ba3>

Considerations for banks on innovation disclosures

Our analysis suggests that banks accept the importance of providing disclosures on innovation. The main driver for providing such disclosures is the inability for traditional financial statements to accurately reflect the real value of innovation. The apparent gap between this accepted need for disclosures and the shortage of meaningful disclosures is highlighted by the difficulties in defining and measuring what innovation is.

Four areas are prevalent in the responses from banks when addressing the issue of how to measure the value of innovation.



1) Innovation is not a separate capital

Banks are heavily focused on innovation in 'Digital Banking'. The solutions may not always lead to a patented result. This is fundamentally different from, say, pharmaceutical companies where the outcome of R&D most often leads to a patent or licence. Innovation is often classified as 'Intellectual Capital' but the value of the innovation is embedded across multiple capitals including:

- **Manufactured capital** as it pertains to actual software and hardware (e.g. new IT platforms for mobile banking)
- **Human capital** as it pertains to the ability and desire of employees to innovate. Innovation is often described as a 'culture' more than a 'process'
- **Relationship capital** as it pertains to the ability to build links to entrepreneurs aiming to disrupt the way banking is done

There is no single capital that captures the entire value of innovation. Disclosing it as a distinct 'capital' can be considered as an option but this runs some risk of 'double counting' value embedded in other capitals.

2) Sensitivity of information

As development of new digital business solutions are seen as a significant competitive advantage, any detailed disclosures around such initiatives are regarded as sensitive.

3) Data Availability

Given the difficulties of measuring the value and effectiveness of innovation, combined with the inability to capitalise the cost of innovation under most accounting frameworks, there is a lack of readily available data. Some banks use broad measures for internal management purposes but find that the data is neither robust nor conclusive and thus it is not reported externally.

4) Measurement issues

Measurement issues exist in many forms:

- The cost of building a new digital business model (e.g. cost of IT soft/hard ware, innovation departments etc.) is a pure measure of the value of the innovation.
- It is not feasible to comprehensively capture the cost, much less the value, of more generic initiatives to instil a culture of innovation in a bank's employees, but in the longer term, these programmes may create the dominant value to be harvested.
- Quantitative but non-financial measures, such as the number of 'proof of concepts', may be misleading. For example, a bank may have undertaken multiple experiments with different technologies but still fail to discover or implement the next disruptive technology.

As a result of the observations noted above, banks most often favour qualitative rather than quantitative disclosures.

Anecdotally, one bank (yet to prepare a fully compliant integrated report) mentioned that while management saw innovation as a material matter, local reporting requirements were stringent and would not allow the bank to comprehensively report on these matters. As a surrogate measure, the bank would report these issues via interviews in magazines and other media.

Adopting R&D disclosures for innovation

Our analysis suggests that while inspiration may be drawn from companies with large R&D budgets, it may not be effective for banks to adopt identical disclosures for innovation. The impact of new technologies is likely to impact the entire business model for banks, and a focus on new products is relevant but not sufficient. Banks will need to explain how they will maintain a competitive advantage in the longer term. With that comes more disclosure of management thinking around: how a culture of innovation is instilled; how the board and executive teams remain abreast of emerging technologies; and how the innovation budget, which is always limited, is allocated.

Notwithstanding the fundamental difference between innovation and R&D, investors in banks' do call for more quantitative disclosures including performance indicators and targets. This is an area where banks may take inspiration from disclosures by pharmaceutical and IT companies. Before emulating those disclosures though, the wide divergence in the level and quality of disclosures amongst banks suggest that many banks have a lot to learn from those 'best in class' examples in their own industry.

Conclusion

In this paper we have explored the amount and relevance of the disclosures banks currently provide around their investments in innovation. We find that banks almost unanimously believe that innovation is a material matter that is critical to their strategy and long-term sustainability.

We learned that investors increasingly find disclosures around innovation to be highly important and seek more quantitative disclosures such as: amount spent; number and nature of projects undertaken; the outcome of innovation efforts; and a distinction between the IT spend on maintenance/upgrading current systems and investment in new technologies. Customers and regulators also have an interest in such disclosures to determine the future services and risks that the banks face.

Despite these observations, we find that very few banks provide more than sporadic disclosures around their innovation efforts. From speaking to banks preparing integrated reports we find that they recognize the need to provide better disclosures as the accounting rules do not currently allow them to reflect the value of innovation. The multi-capital International <IR> Framework provides a useful tool to help banks think about innovation that can lead to increases in financial and intellectual capital in later periods. The main obstacle to providing this disclosure is the inability to establish a causal link between the investment in, for example, IT innovation and the financial results, given the limited data collected and available. The sensitivity of disclosures is also considered to be an issue.

Issues relating to measuring the value of innovation in a conclusive and robust way may explain the current tendency for banks' to make mostly qualitative disclosures. Investors value disclosures around processes and governance that help ensure that banks systematically and comprehensively evaluate new technologies and apply those with the highest potential. Such disclosures may be combined with some quantitative and financial disclosures around the amount spent on innovation and the number of initiatives undertaken to give a sense of the importance of innovation in a bank. In the long term, solely qualitative disclosures are unlikely to satisfy stakeholder expectations, given the perception that such information may be biased.

We looked to the R&D disclosures of companies in the pharmaceutical, automotive and IT/software industries which all have high R&D budgets. We found that such disclosures are of limited relevance to the banking industry because of the fundamentally different nature of R&D and innovation in banks.

Finally, we considered the disclosures on R&D and innovation in existence today that may address investors' requirements and highlight 'best in class' disclosures. We find that banks could take some inspiration from companies like General Electric where innovation has the potential to fundamentally change their business model.

Based on our analysis, we expect that disclosure on innovation will grow and improve as the combination of more data, investor demand and a continuing need for innovation provide impetus for change. We congratulate those banks and other companies that already provide disclosures in this area and those leading-edge organizations willing to experiment and provide meaningful disclosures to lead the way in this difficult area.

Appendices

The analysis for this paper consisted of three areas, which are described on page 11. These appendices provide further detail on: the Desktop review of reports; the interviews with investors; and the interviews with banks.

Appendix A: Companies included in the analysis

Selection Criteria

The selection criteria for the companies analysed were as follows:

1. The company is active in one of the following industries:
 - a. Banks
 - b. Pharmaceutical
 - c. Technology
 - d. Automotive

2. The company had one of the highest R&D budgets according to a study by PwC and Strategy&, 'Global Innovation 1000'⁹. This survey was supplemented by other sources to capture sufficient companies.

3. The following criteria were applied to the banks included in the analysis:
 - Participants in the <IR> Banking Network
 - Public banks listed on the Johannesburg Stock Exchange, which are required, on an 'apply or explain basis', to publish an integrated report
 - Banks whose reporting disclosures on their various capitals are highlighted in the <IR> Examples Database¹⁰

The survey does not purport to represent a statistical sampling of all companies with R&D budgets.

Companies Selected

The following 45 companies were selected.

Banca Fideuram	Financial services	Facebook	Technology
Barclays Africa Group	Financial services	Amazon	Technology
BBVA	Financial services	Intel	Technology
BNDES	Financial services	IBM	Technology

⁹ <http://www.strategyand.pwc.com/innovation1000>

¹⁰ <http://examples.integratedreporting.org/home>

BNP Paribas	Financial services	Google	Technology
Capitec Bank	Financial services	Microsoft	Technology
DBS	Financial services	Apple	Technology
Deutsche Bank	Financial services	Cisco	Technology
FMO	Financial services	Ebay	Technology
Garanti	Financial services	Merck	Pharmaceutical
HSBC	Financial services	Novo	Pharmaceutical
Itaú Unibanco	Financial services	Pfizer	Pharmaceutical
National Australia Bank	Financial services	AstraZeneca	Pharmaceutical
Nedbank	Financial services	Novartis	Pharmaceutical
Sasfin	Financial services	Roche	Pharmaceutical
Standard Chartered	Financial services	Sanofi	Pharmaceutical
Standard Bank	Financial services	Johnson & Johnson	Pharmaceutical
UniCredit	Financial services	GlaxoSmithKline	Pharmaceutical
Vancity	Financial services	Gilead Sciences	Pharmaceutical
Volkswagen	Automotive		
Daimler	Automotive		
General Motors	Automotive		
Ford	Automotive		
Samsung	Other		
Lego	Other		
General Electric	Other		

Appendix B: Questionnaire for investors and analysts

Questionnaire – Disclosures on innovation

Purpose

This questionnaire seeks to explore the importance of disclosures around innovation for companies in the banking industry. As such, it is addressed to investors and analysts covering such companies.

The questionnaire will form part of an analysis of current disclosures around innovation in the banking industry and stakeholders' expectations thereof. The analysis will be included in a report to be issued by the <IR> Banking Network.

Questions

1. How important do you find disclosures on innovation (scale 1-5 where 5 is most important)
2. What type of disclosures including KPIs would you ideally like to see?
3. What relevance would you ascribe to the following disclosures if provided (scale 1-5 where 5 is most relevant)
 - a. Description of the bank's 'strategy' for innovation (fit with strategy)
 - b. Initiatives undertaken to implement innovative new products/processes and purpose
 - c. Initiatives undertaken to educate staff in innovation and how to encourage staff to innovate
 - d. Total amount of cost spent on IT broken into maintenance of existing systems and new solution
 - e. Total amount of cost spent on other innovation initiatives
 - f. Description of how the bank measures success of an innovation project and relevant related KPIs (e.g. customers converted to digital platform)
 - g. Total number of staff educated on 'innovation processes'
 - h. Expected revenue and/or cost savings from various innovation project and timetable for when impact is expected
 - i. Other disclosures (please specify)
4. If a bank can/will only provide qualitative disclosures (e.g. description of selected project undertaken) would that be of relevance to your evaluation?

Companies in industries with significant R&D budgets (e.g. pharmaceutical, automotive and software industry) often provide disclosures around their R&D process (e.g. number of projects in different stages of development and critical milestones). It has been argued that by nature R&D and innovation are different with the latter being more related to the broader business model and culture. Also banks generally do not measure progress of innovation projects in a manner similar to R&D as described above.

5. Do you agree with the above statement that R&D and innovation are fundamentally different and if so, in what way are they different?
6. To what extent would the following disclosure relevant to R&D be relevant as disclosures for bank's innovation process (scale 1-5 where 5 is most relevant)?
 - a. Total R&D spend
 - b. Number of project undertaken within different areas (e.g. cure for lung cancer)
 - c. Description of project, key milestones achieved and to be achieved
 - d. Estimated chance of successful completion
 - e. Revenue potential for different R&D projects in the pipeline
7. Broadly describe how you would include the disclosure in your analysis:
 - a. Included in discount rate
 - b. Included in adjusted cash flow
 - c. Overlay discount/premium
 - d. Other (please describe)

Appendix C: Questionnaire for preparers

Purpose

This questionnaire seeks to explore the importance of disclosures around innovation for companies in the banking industry. As such, it is addressed to preparers of Integrated Reports in the banking industry.

The questionnaire will form part of an analysis of current disclosures around innovation in the banking industry and stakeholders' expectations thereof. The analysis will be included in a paper to be issued by the <IR> Banking Network.

Questions

1. Is the ability to innovate and develop new (digitalized) solutions considered a 'material issue' for the purpose of your strategy and IR?
2. If yes – is the progress and value measured internally?
3. If yes – is the progress and value disclosed externally and how?
4. Have your institution's analysts/investors or other stakeholder groups asked for information around innovation?
5. What obstacles do you see to measuring and reporting investment and value of innovation – e.g.
 - a. Difficulties in establishing the right KPI
 - b. Difficulties in establishing a correlation/causation between investment and value created
 - c. Sensitivity of information
6. Do you have any plans to develop/extent disclosures on innovations?
7. Which of the following disclosures is in your view most feasible to provide (scale 1-5 where 5 is most feasible) and why
 - a. Description of the bank's 'strategy' for innovation (fit with strategy)
 - b. Initiatives undertaken to implement innovative new products/processes and purpose
 - c. Initiatives undertaken to educate staff in innovation and how to encourage staff to innovate
 - d. Total amount of cost spent on IT broken into maintenance of existing systems and new solution
 - e. Total amount of cost spent on other innovation initiatives

- f. Description of how the bank measure success of an innovation project and relevant related KPIs (e.g. customers converted to digital platform)
 - g. Total number of staff educated on 'innovation processes'
 - h. Expected revenue and/or cost savings from various innovation project and timetable for when impact is expected
 - i. Other disclosures (please specify)
8. Companies in industries with significant R&D budgets (e.g. pharmaceutical, automotive and software industry) often provide disclosures around their R&D process (e.g. number of projects in different stages of development and critical milestones). It has been argued that by nature R&D and innovation are different with the latter being more related to the broader business model and culture. Also banks generally do not measure progress of innovation projects in a manner similar to R&D as described above.

Do you agree with the above statement that R&D and innovation are fundamentally different and if so, in what way are they different?

9. To what extent would the following disclosure relevant to R&D be relevant as disclosures for bank's innovation process (scale 1-5 where 5 is most relevant)?
- a. Total R&D spend
 - b. Number of project undertaken within different areas (e.g. cure for lung cancer)
 - c. Description of project, key milestones achieved and to be achieved
 - d. Estimated chance of successful completion
 - e. Revenue potential for different R&D projects in the pipeline

www.integratedreporting.org