Frank Kuhnke at MS European Conference, London

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Transcript

Presentation:

Frank Kuhnke: Good morning, ladies and gentlemen.

I'm very pleased to speak today at the Morgan Stanley conference. As [Magdalena] had said, I unfortunately have to disappoint you slightly as I will not be talking about or taking questions on the review of the strategic options announced over the last weekend.

Instead in my presentation I would like to introduce you to my area, the Group Chief Operating Office and get you some insights into the journey that my COO team, jointly with some business lines and our infrastructure partners has embarked on to make Deutsche Bank more stable, more efficient, and fit for the banking future.

Let me start with a brief introduction to the Chief Operating Office on slide number two. With around 15,000 full time employees, COO is the backbone and the engine room of the bank executing the services Deutsche Bank provides to its clients across all three business lines.

The CIO area is responsible for group IT standards, the architecture, the infrastructure IT road map, safety and soundness of programs to it and our data, manage our data and document retention, and steer the 'journey into the cloud', something I will introduce to you a little bit later on the back of our platform as a service concept. The Chief Security Office is keeping the bank and its data, IT, and infrastructure secure - from physical threats and emerging cyber attacks.

Our data teams drive data processes and governance for the benefit of complete, timely, and accurate insight into client, product, trade, and unstructured data. And our innovation teams connect the bank with start-ups and technology specialist worldwide to solve business-critical challenges and provide the best solutions to our clients.

Group Corporate Services manages the bank's real estate across the branches, hubs, and our near and offshore centres. They also execute or facilitate DB's 9 billion external vendor spend. Our CIB Operations teams are running the 'CIB engine room', as we call it, globally - with excellent efficiency, stability, and flexibility. And our Client Lifecycle Management area is of heightened interest as those colleagues help to ensure that AML risk is appropriately identified, risk assessed, and managed.

Our objectives are derived from our commitment to generate best-in class stakeholder outcomes. To do so we have three priorities we focus on: Stability or Effectiveness, Efficiency or Cost, and the Future of Banking as you can see on slide number three.
Let me start off with 'Stability'.

To our management team and I, 'stability' (in terms of predictability of generating positive stakeholder outcomes) represents our 'license to operate' and is our 'hygiene factor' for the bank. This is non-negotiable and to us and our clients and regulators and is of utmost importance.

As you know, the bank is executing on its cost reduction program including the targets to reduce adjusted cost by another $1 billion over 2019. This forms part of our efficiency drive. My group's COO team plays a key role in helping the bank meet its cost and efficiency targets.

Within COO, we have over 2018 spent time and effort to understand our demand and external spend patterns behind the EUR 9 billion procurement volume. Now, we are cutting back by eradicating complexity, duplications, and waste - all of that without compromising on stakeholder outcomes or controls.

I am particularly excited about the work we're doing to simplify our organization, broaden automation and improve KYC processes. These are already yielding measureable results.

Now, last but not least, 'Future of Banking'. Getting the first two objectives right sets the foundation for moving into competing as the bank of the future. We know the future of banking will be platform-based using our natural advantages to host a wider range of products and services for our clients.

Our objective is to solve business challenges with the most appropriate technology - and we are realistic that this will involve collaboration with start-ups and technology companies where our five Innovation Labs, which I will introduce a little bit later in more detail, play a critical role.

I want to highlight to you our business-led approach to innovation. Within COO, we use our Innovation Labs to introduce FinTechs and their capabilities to our business and infrastructure lines and partners to achieve the objectives. We set the group standards centrally but client and product digitalization is owned within the business lines. We believe in this model as it fosters agility and avoids wastage.

Let me show you how we are thinking about 'regulatory preparedness' as a key requisite for 'stability' on slide number four. Stable operating environments and our IT infrastructure is not only of importance to Deutsche Bank but will be a key focus area for banking supervisors also in 2019. Let me focus on two items in this regard: Operational resilience as well as Cyber security.

In an age of instant access and mobile technology, evolving cyber threats as well as emerging technologies such as Artificial Intelligence, a strong focus on resilience is extremely important.

Think especially about the fact that we are using more and more agile software development and deployment. This means that applications are coded rapidly from the user's point of view, are released more quickly and are continuously developed - which inherently creates the risk of disruption. As a result we and the industry are using these changes as a catalyst for rationalization and simplification of system architecture and the underlying infrastructure.

Let me share some insights into what we are doing in the era of Cyber security:

- We continue to invest into the protection against an ever evolving cyber threat landscape.
- Our dedicated Cyber Incident and Response Centers in Germany, Singapore, and the U.S. are setup to provide 24/7 follow the sun coverage across different time zones.

They improve our capability to detect threats and robustly early respond to incidents globally at any point in time.

- We are regularly conducting comprehensive security awareness campaigns to strengthen the 'human firewalls', i.e. make our staff more aware, by educating our employees globally around all aspects of information security.

Let me move on to slide number five to give you a more detailed view on IT stability. We have made considerable progress on our IT stability in the last two years. In general, our critical IT systems are highly reliable. We achieved our 2018 target of IT uptimes of 99.97%.

If and when we experience critical incidents, we have the safety and soundness approach to instantly resolve these with stringent 'reach across' type of retroactive and forward looking lessons learned framework across DB and what's equally important across our vendors.

Our failure and error rates are also extremely low. In 2018 we have reduced the total operational losses by 83% year over year. In spite of DB processing payments in excess of EUR 1 trillion every day, our operational losses in our Ops processes amounted to a single digit million amount.

The adoption of agile software development approaches with shorter release cycles as part of digitalization strategy is driving up the number of changes to the production environment.

Our efforts and focus around driving enterprise wide standards defined and overseen by our group CIO function have contributed to a reduction of major incidents caused by these production changes. This includes, for example, operational readiness checks for all new releases of software and a more stringent check of controls in the software deployment lifecycle.

As of now, over 90% of our technology components are compliant with our Technologic Roadmap and those components are respectively supported, which means they are running on supported products. We are approaching 95% for the end of 2020 and we have good transparency and control over the remainder. This is part of our stability commitment.

Now, talking about efficiency. Let me show you how we think about 'efficiency'.

The new management team that I have become part of in May last year, made good progress in 2018 in reducing the adjusted group cost by EUR1.1 billion and outperformed the set target.

This year we remain committed to reducing adjusted costs by another EUR 1 billion to 21.8, even from a lower starting point at the beginning of the year. Approximately half of the cost reductions in 2019 should come from the annualized benefit of measures we executed in 2018 including lower headcount, which obviously we took out over the course of 2018 and now will annualize in 2019.

To achieve the additional EUR 500 million of savings that you can see on this slide, we expect to benefit from our planned additional headcount reductions, synergies from our German retail merger and the completion of the sale of our Portuguese retail operations.

We will also benefit from management's ongoing efforts to reduce non-compensation costs in External Spend, under the Cost Catalyst program. This is high on the agenda of James von Moltke, our CFO, and myself, as you can see on the next page.

So to get our answer on cost and drive them down, we launched the Cost Catalyst program within our CFO function in February last year.

The program aims to instill a better cost culture, enhance, pursue, sometimes even small ideas. It covers both external spend initiatives, addressing both sides of demand and supply, as well as more structured initiatives, that tackle compensation cost, organizational structure, process improvement, as well as regional operating model setups.

The program comprises six workstreams, each led by a management board member, so this high accountability and expertise is brought into the work streams.

Being in charge, myself, of procurement, I am responsible for optimizing our external spend, which at EUR 9 billion accounts for approximately 40% of our annual adjusted cost.

Within the external spend work stream, I have assigned 21 expense lines, so cost categories, to 12 expense line owners. They are responsible for clear cost category standards, so the [rules], how, when, where, and with whom we spend our money, to ensure spend control and oversight, as well as identify and implement savings measures.

Examples for what we have delivered in 2018, to give you a sense of tangibility, include

- eradicate 'nice to haves' in IT, Operations and broader demand for services and goods.
- We've applied a significant reduction of our IT consulting spend, partially through internalization.
- We applied standardization of our travel and other discretionary spend categories across the globe,
- and we price renegotiated our facility management and other large contracts with our key vendors. These are just a few of many that we are pursuing across the entire organization. Managing demand and reduction of optionalities have proven to be key levers and key principles.

So on the efficiency, for a start, let me make clear that we are not taking short-term cuts that impact our long-term investments and stability, especially in our technology and controls. We do not trade stability for the benefit of cost reduction.

As you can see on slide number eight, despite the overall cost reductions, we have kept our IT spending in the last three years stable at approximately EUR 4 billion a year. In our definitions, this includes to–run-bank, to change--the-bank and the amortization, but it excludes personal costs.

Like many other banks, we continually have to respond to both the required regulatory agenda and market expectations to upgrade in our service platform and client interfaces. To give you an example, in our central IT function for the Chief Risk Officer, new regulations in the Market Risk Management space will increase the number of calculations we need to perform on a daily basis, from 350 billion in 2019 to over 1 trillion a day from 2020.

The amount of compute capacity and power we require within a data center-based hosting environment would have to triple to deal with this.
More broadly, across our infrastructure, the impact of this ever-increasing controls ann regulatory demand is driving an ongoing growth of compute capacity of around 12% every year.- Despite these regulatory investments, we have reduced the cost of compute by over 30% since 2016. So in other words, we are doing more for less and in a better way.

We also reorganized our global CIO function towards one organizational Group design, interfacing with all three of our business plus infrastructure lines, releasing over 860 permanent and vendor staff over 2018, as part of our continued focus on operational efficiency.

The two primary objectives of this reorganization were to force standardization and reduction in complexity by strengthening our Group functions, such as group CTO, for architecture, design and user applications, but also including safety and soundness across all DB group.

Further, the consolidation of duplicative functions, a reduction in staff presence in high-cost locations and to deliver better quality through establishment of end-to-end responsibilities. In Group IT, we are reducing major inefficiencies by reducing complexity on costs. For example, we have reduced the number of operating systems already to 26, which is down from 45 in 2015. And we have a clearly defined roadmap to further reduce the number of those systems.

At the same time, we are taking a structured approach to investing in the modernization of our IT infrastructure and client applications. I'll explain what this means in more detail on the following page.

So we are focused on reducing costs but we continue to invest in our long-term future. Let me provide you with some insights into how we approach the third pillar of focus, the future of banking, as you can see on slide number nine.

We understand the influence of a more digital influence of a more digital world on our operating model and have embarked on a journey to become a more technology-led enterprise.

We have the scale, the resources, the vast industry knowledge and maturing digital abilities to turn disruption into opportunity, both internally and in collaboration with third party experts and disrupters, such as a the FinTech community. As banks develop into technology-driven companies, research and development becomes even more important.

Deutsche Bank has become one of the first financial institutions to establish professional research and development capabilities, including the global network of five Innovation Labs in Berlin, London, Palo Alto, New York and Singapore, as well as our Digital Factory in Frankfurt.

Our Innovation Lab acts as observatories and is the bank's eyes and ears out there to discover emerging technologies. While understand the bank's business needs, they offer a safe environment where ideas, technologies and concepts can be tested, can be applied and iterated rapidly and efficiently. The Innovation Lab concept makes it straightforward for startups to work with the bank.

Since the labs opened, we have engaged with over 3,200 startups and delivered solutions in areas as diverse as trading in the bank, compliance, retail, wealth management and in my own operations department.

The expert at our Dublin-based Data Lab help our businesses and infrastructure units analyze vast quantities of data to generate new business, to protect our assets and to offer better services and products and streamline operations. For example, the data teams worked with Deutsche Bank's transition team and GTB team to help a multinational client report and analyze global intraday payment flows - saving the client money and resulting in new business opportunity for the firm.

Let's talk for a second about the 'Cloud strategy' – which is very dear to my heart and I'm very excited about. Successful banking in the digital world requires an agile working environment, an objective that is very hard to achieve in a data center base application and hosting environment.

We have defined our strategy around the cloud computing that defines the broader IT perimeter, and our management board has expressed its support and has become part of our delivery agenda.In the old world, - how IT has been in the past -you could run one application on a server you bought and installed in one of the many data centers. If the application was idle, the server was also doing nothing and was completely underutilized. For the same application, the bank typically would hold comparable capacity in User Acceptance Testing and Disaster Recovery Purposes, which are normally inactive for most of the time.

Now, in the cloud, the computer power of services is pooled and shared by the applications.

Instead of buying a physical server, you now just request a quantum of computing power for a certain period of time, matched to the capacity and durations that really actually need. The benefits are much greater flexibility, faster time to market and reduced cost. You're now only paying for what you use, rather than paying for the potential peak demand at an undefined, distant future point in time. Our aim is to move the majority of our applications to a cloud environment and away from expensive and inflexible physical servers.

While moving to a private cloud initially, the goal was always, and still is to explore public cloud capabilities in a well governed and safe manner. We actually continue to pursue that very aggressively. We are very proud of our industry leading Fabric platform, which allows developers to focus on developing business software instead of buying and installing the physical infrastructure needed to run the applications.

Fabric provides an easy way to source computing power and storage on demand from our private cloud infrastructure in minutes rather than in months as it took in the past. This is actually an exciting journey our I. engineers are embarking on, it will accelerate our IT, reduce costs and will redefine the way we run our infrastructure to improve materially our business agility.

Let me highlight on slide 11, a few innovation examples across our business division to make this a little bit more tangible to you. In CIB, the prime example in our corporate and investment bank is of course the Autobahn -- I will cover this in more detail in a subsequent slide.

To accelerate the development and adaptation of Application Programming Interfaces or APIs, globally we acquired the Mumbai-based software company, Quantiguous in May last year.

Our investment bank is building on the existing Deutsche Bank Application Programming Interface, or dbAPI as we call it, which was successfully launched in our Private and Commercial Bank in 2017 and which is already linked to numerous external applications. Another innovation example is alpha-DIG launched by Deutsche Bank Research.

The interactive web tool uses Natural Language Processing (or NLP) to quantify the importance of Environment, Social and Governance (ESG) issues, and other company intangibles. It is the first product to stem from a broad data initiative within Deutsche Bank Research, hosted on a new platform called Data Innovation Group, or DB-DIG.

In our Private & Commercial Bank one great example of cross-industry partnership is our involvement in Verimi, in which we are founding member. The aim is to create a cross-industry registration, identity and data platform for the Internet. Whether telephone bills, bank accounts or purchases, customer log on once with their Verimi identity defined, and will in future be able to prove their identity perfectly in the Internet all under European Data Protection Standards.

In December 2018 we were part of the launch of ApplePay in Germany, with adoption numbers to date actually exceeding our annual expectations. And since January this year our new Yunar application has been available in the iOS, and Android App stores in Germany. It enables users to manage their customer loyalty cards on their mobile phone.

We have seen a very high number of downloads and a high conversion rate from download to active usage, and we are very excited about the potential this has.

In asset management (DWS) we have implemented WorkFusion, a cognitive robotics solution to solve middle, front, and back office process automation. The automation tool optimizes manually repetitive tasks like data capture and publication of data to multiple parties.

In our DWS Trading our teams receive more than 3,000 securities lending requests every day from counterparts. We have applied Natural Language Processing to automate current manual processes by traders reading hundreds of sentences on Bloomberg and e-mail, looking up corresponding securities holdings, pricing them and writing broker responses.

The applied Algorithm understands the meaning of text, and determines features, fields and entities and their value. This means that it can read unstructured data, and return structured data to be processed further.

Coming back to Autobahn, Autobahn is the CIB electronic trading platform, which we launched in 1996, so quite a while back, and originally focused on FX. We were one of the first banks to launch this service, and it is one of the reasons why we have grown into one of the biggest global foreign exchange traders and providers.
Autobahn is a globally recognized platform that is integrated into the desktops of most of our corporate and institutional clients, and it's used by tens of thousands of customers every day. Over time we have expanded the range of products that can be accessed by Autobahn to include stocks and bonds as well as transaction banking products.

We are actually in the process of placing our CIB KYC client engagement tool, and the intake of customer documentation likewise on Autobahn. It is a synonym for direct connectivity between clients and the bank, and a gateway to CIB's capability across liquidity, pricing, transaction and client service.

We are now reviving and investing in making Autobahn multi-channel and adding more products and services. As clients expect direct access to our internal tools and datasets, and they want the connectivity digitally via Apps, APIs and mobile channels, today our App market gives clients access to over 120 applications of Deutsche Bank.

The platform serves also as a common brand and distribution platform for all digital offerings and channels in CIB, including the desktop, the web, the mobile, and application program interfaces. In a platform economy digital capabilities such as Autobahn are critical to open up new revenue streams.

So in conclusion, I hope that during my presentation you have gained a good overview on our journey across the three focus areas that we embark on - stability, efficiency, and how we develop the future of banking from a technology perspective.

Let me close out with an outlook how the COO organization will continue to contribute to Deutsche Bank's strategic objectives and derived targets. As a bank we are focused on executing on our near-term targets, but not losing sight of all long-term priorities. Most notably, we will continue to reduce costs via execution disciplines that we strong and firmly adhere to, and by leveraging expense accountability.

We will further drive I. efficiency by implementing end-to-end accountability as well as flexibility via APIs and Cloud. We will enhance the scalability of our processes by investing in automation and innovation technologies. And last but not least, we will further strengthen security and controls, and reduce risks.

Thank you very much, over to you, Magdalena.

Q&A:

Magdalena Stoklosa: Thank you. I'd like a moment just to invite you to sit with me here. Thank you. So since we're talking operations today, and of course you've mentioned the change of managerial guard last year, as the new COO, what are you doing differently? Can you give us a context of how the priorities change, and what are you implementing?

Frank Kuhnke: Yeah, pleasure. So you will know that I took responsibility for the COO area in May last year, and as banking is all about people and the people's business the first thing that I did is I looked at my management team and in the sense of, do they have the right competency, and do they have the right integrity? And the majority of our management team is still with me, and we are pursuing our agenda that I've outlined.

So then on day one, I faced the challenge that we needed to land our EUR23 billion cost target that required that the management team had to go back in to the investment plans but also in to the spend, and had to focus immediately on simply reducing the run rate cost and re-review our CTB.

And for that actually, what we found really important is focus on analytics and also focus on execution, to land the target numbers at the end of the year which you've seen we've achieved.

The other thing is that when you take over a role, you look at the areas where more work is to be done. And there were a number of areas that were reasonably apparent to ourselves, but also externally. Starting off with one of our vendor arrangements in the wholesale space, namely a vendor that was managing our datacenters and where we were not able to implement a cloud strategy. We've rebased and basically we have come to a re-arrangement at the end of the year which was the catalyst to move into the cloud.

Another area that required immediate attention was the data space, namely we have created good outcomes to our clients but from a regulatory perspective the systematic approach to those looking at data plans, looking at data contracts and systematically linking the manufacture of data on the business side with the consumers in risk in finance and treasury, we were behind what the expectation was, and what actually we had articulated. We caught up and I think we have now a high degree of recognition by our regulators in Germany and in the U.S. that we're on the right path.

There were some areas like KYC that we needed to pay more attention to which actually depended really on two things. The first thing is a very focused operational and to technologically focused approach to actually improve the way we were operating. And the second thing is a complete execution and delivery focus.

Now, this all is less exciting than most of our staff probably would look for. So that's where we also established a couple of North Stars or lighthouses. So one of them is what we call Ops 4.0.

Namely, we put out a program where we said we would systematically look at our operational processes in areas where we have less strikethrough or automations than we would hope for and that technology would allow. We will systematically bring in robotics, bring in automation to actually increase the speed, increase the control, and reduce the cost. And at the same time we will also deliver quicker, better outcomes.

And I mentioned our cloud strategy that is something our technologists are hugely excited about getting out of the data center in its controlled and systematic manner and actually using public/private cloud, using the Fabric and the platform as a service.

So in essence it's been about execution, it's been very about being very clear what counts. Stability first, cost second, and at the same time not losing sight of the banking of future. The people that we are have the right DNA and we are very, very focused on delivering positive outcomes now.

Magdalena Stoklosa: You've mentioned the risk side a little bit in your answer. So how comfortable are you that you're fulfilling the regulators' requirements in terms of KYC and AML? Of course we have kind of over the last couple of weeks, we have seen kind of this theme reemerging for the European banks as a whole.

Frank Kuhnke: Yes, let me probably pick up on the KYC. First, so KYC, the attention that is in the public space is in particular on CIB-KYC. But we should not forget though that we have 20 million customer in the retail space where we run processes and where we run KYC through the regulatory requirements.

We enforced an AML rule set to where we have a proven track record actually of customer on-boarding, customer ongoing monitoring and respectively of the reporting and off boarding if and when required.

So that's a side, that's not an area, it's an area of focus but not an area that we've been struggling with. So we've been struggling with CIB-KYC for a simple reason. And the simple reason is that in our CIB area we have three product areas. We have over 40 booking locations.

In each of the booking locations a customer can have multiple products, be it FX, be it derivatives, be it equity trading and so on. A customer is not necessarily a single legal entity but in cash management you can have vast groups with over hundreds of subsidiaries.

And when you visualize the effect that in each of the locations there are small nuances to how good in terms of KYC adherence looks like or the rule set looks like,you can easily visualize a complete spaghetti in front of yourself.

Now, why have we struggled there? Very simple. In the past being able to identify and lock down the customer perimeter, then recognizing customers where necessary as a group and recognizing the interdependency of a treasurer of a multinational, you don't approach him hundreds of times out of each and every one of the location for each of the product.

This coordination, then building the workflow tools and frankly the regulation has been moving on: The latest fourth AMLD, for 1 January 2020 comes the fifth AMLD with additional requirement - that catch up has frankly overwhelmed us in the past.

Now, middle of last year we made this a topic of attention of the management board. We exercise on a monthly basis at our board oversight. We place that task into my operational environment and I've spent a good amount of time and effort in getting the tools right, catching up on the regulation.

As you have read we have been given KPMG as a monitor. So they're sitting on our side and looking over our shoulder but also advising us on some of the interpretation of the rules.

And I guess success is measured in where you stand versus your deliverables. We have eight deliverables of which I think today we deliver three, one we've already placed. We're on good track on the remainder and in particular on the remediation, we have a staggered approach of by June this year to remediate to high risk clients then respectively, medium and low.

Yesterday, we had a review with management again. And I personally have no doubts that we will fulfill the high risk requirements and then medium, low. And frankly, among the eight deliverables, those of remediation are the most challenging; the remainder are well on track.

Now, that's on KYC. Talking about AML. My view and based on all that we have seen is that obviously we are with about 40% of Euro clearing a major provider in Europe and with that we have a broader bench of banks that we work together with.

And we'll need to understand the roles. And the roles in that year, in the clearing and in the correspondent banking are that you need to understand your counterpart, which is predominantly your correspondent bank you deal with. You need to apply transaction monitoring, balance checks and the likes. But the primary responsibility of identifying and on-boarding and doing the KYC lies with the bank that actually is facing the customer.

And from our own review you may know that we have put a team, an expert team, on the historical review. We are led to believe and all indications are that we are absolutely within the rules and expectations and requirements of what a correspondence bank would have been expected to be doing.

So in that sense I believe that it is an evolving area and certainly we are now looking at whether we should further introduce additional tools, additional processes on a forward looking basis but best practice and expectations that existed on AML, actually we are very confident that we adhere to.

Magdalena Stoklosa: Perfect. Thank you. And my last question is really about the competitive positioning. Particularly when you look into a cost cutting cycle but also at the time to stay competitive and when we look at various global banks, technology spend, I mean kind of numbers out there are literally kind of around 10 billion for the largest.

You just told us that your budget was broadly EUR 4 billion. Could you put it in context for us and also how does the investment stack up at the time when of course you are also kind of reevaluating a big portion of your cost base in general?

Frank Kuhnke: So as I mentioned, what is nonnegotiable for us is stability of the outcomes. There's absolutely no doubt around it. Now, I've been asked many times whether there's a reset button where you could inject into our firm and enter a new IT system that's full automated and strong.
And in reality that is not what is practical. However, to improve automation, to improve the efficiency of your IT stack you need on the one end the insight, what is available in terms of technical tools, you need to have the focus and the execution mindset of your IT people, and then you basically need to work yourself through the opportunities.

Let me give an example. For example, in our data centers historically we didn't have such a tight management of the data we were retaining. We have obviously lots of hardware. With the cloud to strategy, we will be able materially to reduce our operating cost and reinvest that into the move into the cloud.

So through our Innovation Labs, we know what technology is available. For KYC, for example, we looked at off the shelf available FinTech and other technology solutions, which we brought to the table. However, the solution doesn't lie in billions of large scale investment. It is bringing the right tool, being able to map it into your existing processes and then making sure that's coherent and the controls respectively work.

So on that basis, I'm not saying that within 12 months you will have some magic wand and it's all glossy and shiny. But number one we actually produce solid predictable and also recognize outcomes for our customers. With the technology we have with FinTechs, with our own engineering, we have the ability to reduce the cost stack and we will reinvest that.

And on that basis actually, I'm very, very confident with that. On the one end we have an interesting technology story. You've seen our data labs, you've seen the innovation centers, you've seen Ops 4.0 and respectively our cloud strategy that together will consistently move us forward for better customer outcomes and actually will contribute to the efficiency.

Magdalena Stoklosa: Perfect. Frank, thank you very much for being with us today. Thank you very much for our audience. Thank you.

Frank Kuhnke: Thank you.

Magdalena Stoklosa: Thank you. Thank you very much.

By their very nature, forward-looking statements involve risks and uncertainties. A number of important factors could therefore cause actual results to differ materially from those contained in any forward-looking statement. Such factors include the conditions in the financial markets in Germany, in Europe, in the United States and elsewhere from which we derive a substantial portion of our revenues and in which we hold a substantial portion of our assets, the development of asset prices and market volatility, potential defaults of borrowers or trading counterparties, the implementation of our strategic initiatives, the reliability of our risk management policies, procedures and methods, and other risks referenced in our filings with the U.S. Securities and Exchange Commission. Such factors are described in detail in our SEC Form 20-F of 16 March 2018 under the heading "Risk Factors." Copies of this document are readily available upon request or can be downloaded from www.db.com/ir.

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