

IBS ON BANKING

Supporting finance industry in Digital Transformation



Foreword

Dear Customer,

So you are on the path to digitally transform your bank. Probably you already know that this is a journey not a single project. There are many things to consider on this trip and there is more than one starting point. Transforming a business is not an overnight job, but it is a digital world now and it demands certain changes for you to succeed.

Regulations like PSD2, GDPR, Data Lineage (to address some) are significant challenges and it takes integrated approach across all your operations in order to fulfil them.

Digital transformation journey is not a simple one. It is a quest. A quest with many adventures and challenges along the road in a constantly shifting world. Customer experience, Innovation, Big Data and Analytics, operational effectiveness, new regulations frameworks, new agile software paradigms and fully integrated systems, new talents, new skills and new corporate culture are just pieces of the puzzle you need to solve.

On this quest you will need partners. Partners like us. At IBS we work, try and learn new things so we can evolve and grow every day while helping our customers and ourselves to transform. Our passion, our talents and skills are among the best tools you can get to arm yourself for this quest.

Goran Angelov
CEO, IBS Bulgaria

Industry **Challenges** to address

Digital Transformation

New business models arise everyday. But to enable your bank to take competitive advantage and lead in the digital world you have to add agility, operational efficiency and automation to your processes. You have to transform to endure in the open banking world and introduce new business models to build new revenue streams. New platforms for digital banking (like iBanking) emerged and are opportunities to kick-start the transformation wave and successfully compete with FinTech startups. Data is your solely advantage over FinTechs. Apply advanced analytics in real time to keep your business a step forward.

PSD2

The new EU directive speeds up the open banking trend. Starting from January 2018 by September 2019 you must fully comply with all PSD2 and recently published RTS requirements. It is not up to a API interface only - you have to provide compliant Secure Customer Authentication, transaction monitoring and fraud prevention with real-time scoring mechanism to all bank transactions. Those who outsmart their competitors and are able to embrace the API economy will be the ones to lead the industry in the next decade.

GDPR

General Data Protection Regulation (GDPR) is a must to comply by May, 2018. Complying with the GDPR requires any organization with personal data on EU residents to implement both organizational and technology measures to remain in compliance. Organizational measures include appointing a Data Protection Officer, developing policies and training on handling personal and sensitive personal data, and an approach for executing a Data Protection Impact Assessment (DPIA). Technological measures for protecting data include capabilities like data classification, data loss prevention, encryption, managing consent more explicitly, data transfer limitations, and technologies that enable data subjects to exercise their rights to access, rectify, and erase personal data held by data controllers.

Industry **Challenges** to address

Faster and leaner business processes

FinTech companies are able to offer competitive services at extreme low rates. As digital establishments their business costs are very low. Traditional banks have no choice but to go leaner in order to stay in business. Embracing new business models and new technologies without reengineering internal business processes is a recipe for a failure. Transform digitally from the inside.

Operational efficiency

Legacy business models rely on legacy systems and legacy infrastructure. This drives unexpectedly higher costs compared to new architectures and systems for computation and data storage. Perform TCO analysis on your current infrastructure compared to a more leaner software defined approaches and make sure that you are utilizing your resources and investments at a maximum rate.

Stronger security

Digital world means digital threads. You must strengthen your security from user identification and access control, systems and data protection to AI enabled security over your entire network and services. Prepare for unexpected and worst scenarios. Security breaches can cost you significant finance losses and damage your reputation for good.

Shift your corporate culture toward a digitally enhanced workplace

Digital transformation is about people as well. Customer centric approach is in the heart of it. The change should start from within. New business models require new ways of thinking and new ways of working. Transparency, connectivity, collaboration, socially engaged teams are some of the ingredients of the mix you need to enforce digital transformation successfully . Many companies are looking for the best approach to transform the workplace. But simply deploying corporate social network or cool new collaboration tools is not sufficient. Culture transformation is not an IT problem.

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PSD2

API Composition and Management, API Secure Gateway, Real Time Fraud Management, Transactions processing hub

PSD2 Compliant Solution

IBS OFFERS

According to the directive, any banks that operate in Europe will need to provide wider access to their payment processing systems to registered third-party providers (TPPs). TPPs, which can range from traditional banks to app providers, can use that access to offer new account information service (AIS) and payment initiation service (PIS) capabilities.

PSD2 creates tremendous new opportunities for banks that choose to go beyond the minimum requirements. Banks that take a proactive approach – embracing changes and modifying their business model – can become disrupters that reap the rewards of shaping the new landscape.

Banks could also become payment aggregators. A bank could, for example, offer bank-branded point-of-sale (POS) terminals that accept payments from multiple banks. In that scenario, the bank would consume APIs from other banks and provide the payment initiation service. This approach could help the bank strengthen its partnership with retailers and solidify a primary relationship with consumers.

IBS offers an end to end integrated environment for API development, composition and management based on industry leading platforms like IBM API Connect and IBM DataPower Gateway.

The Solution covers all PSD2 requirements for API portal via secure gateway. The TPP can access a dedicated Developer portal, sign up for particular API's and work in a sandbox environment to develop and test their solutions.

Developer Portal

API Gateway

API Manager

Micro Services Runtime

Bank administrators have full monitoring on the API usage, can set up policies, track TPP's applications and provide required services and support.

All functionalities are delivered from one fully integrated environment which connects your bank to the open banking world.

Strong Customer Authentication

IBS PROVIDES

The European Banking Authority (EBA) published its long-awaited final draft Regulatory Technical Standards (RTS) on Strong Customer Authentication (SCA) and Common and Secure Communication (CSC) under the revised Payment Services Directive (PSD2).

A basic definition of “strong customer authentication” is present in article 4(30) of PSD2. It states that authentication has to be based on the use of two or more possible authentication elements, categorised as knowledge (i.e. something only the users knows, such as a password), possession (i.e. something only the user has, such as a token) or inherence (i.e. something only the user is, such as a fingerprint or face scan). Furthermore the authentication factors must be independent from each other.

In case of a payment transaction, the authentication code must be dynamically linked to the amount and the payee, meaning that this code will change if either the amount or the payee is changed during the transaction.

Under PSD2 the SCA procedure is the responsibility of the Account Servicing PSP (ASPSP). Payment Initiation Service Providers (PISPs) must use the credentials issued by the ASPSP, unless there is a prior contractual agreement in place between the PISP and the ASPSP that the former’s credentials may be used.

IBS provides a complete solution for both eBanking and eCommerce security needs in terms of user authentication, enrolment, and transaction verification if requested. The solution includes all the necessary parts required to meet bank’s standard use cases and for SW token functionality PSD2 requirements for SCA:

Supporting bank customers to use smartphone to:

- either generate an OTP for eBanking login (standalone Mobile Token)
- generating simple time-based OTPs
- generating Transaction data signing OTPs by manually entering transaction details
- generating Transaction data signing OTPs by using encrypted QR-code processing by the mobile phone (requires camera)
- also supporting seamless single-device user experience using Inter-App calling with automatic parameter passing between Mobile Token and Banks mobile applications
- online token processing using push notifications

The solution is fully compliant with PCI-DSS and based on an industry leading platforms.

Fraud Management

IBS INTEGRATES

The draft RTS mandates the usage of transaction risk analysis (TRA) to prevent, detect and block fraudulent payments. RTS stipulates that transaction risk assessment mechanisms should be based on elements such as the amount of the payment, known fraud scenarios, signs of malware infection in the payment session, etc.

RTS allow payments, which are rated as low-risk by the payment service provider, to be exempted from SCA.

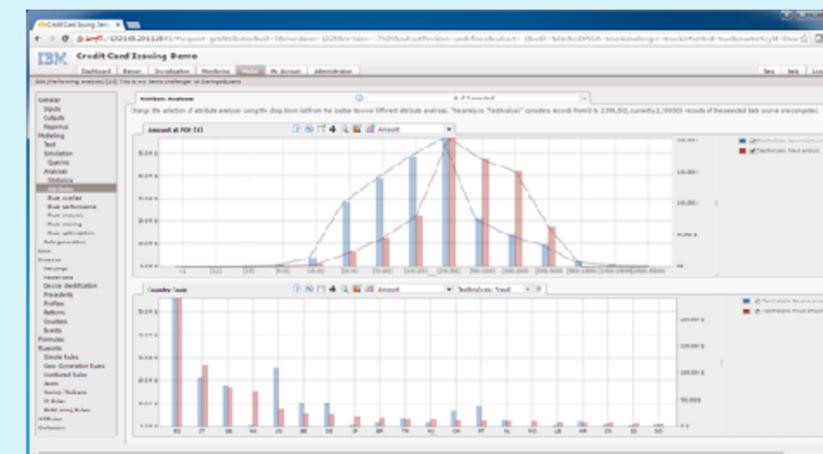
This exemption is however subject to a number of conditions:

- Transaction risk assessment should take into account additional elements such as the payment patterns of the payer, the location of the payer and payee at the time of the payment transaction, characteristics of the payer's device or software application, etc.
- The fraud rate of the payer's payment service provider determines the maximum payment amount that can be exempted from SCA. The lower the fraud rate of the payer's payment service provider, the higher the payment amount that can be exempted from SCA.

In order to take advantage from SCA exemptions and offer seamless and user friendly experience to its customers the Bank has to implement sophisticated real time counter fraud management solutions. It is critical to provide transaction risk analysis in real time.

IBS integrates intelligent IBM Counter Fraud Management for Safer Payments - an end-to-end solution for preventing fraud in all cashless payment channels. Used by some of the largest banks in the world, the solution offers superior fraud detection accuracy and greatly reduced false alarms. It can be used for issuers, acquirers, payment switches, multi-channel or online banking, and alternative payments.

The solution uses interactive machine learning from past data to generate expert rules and scenarios. Enables you to create and change models in minutes, using less data, to understand both lift and false positives before production deployment. Offers advanced analytics techniques to help you build models with machine assistance.



Real-time transaction processing and instant payment hub

IBS HELPS

With so many digital channels open banking approach is a huge challenge for the banks back-end systems.

Card transactions, ATM's, online banking, e-commerce, PSD2 API's and more. All these needs to be monitored, checked for fraud and provided instantly 24/7 to the customers.

In this environment, financial institutions must now track, manage, and report on transactions while facing the challenges of changing business requirements that demand rapid extension, and expansion for more capability.

These environments resist change because they have the following attributes:

- Complex and costly to maintain
- Incompletely documented
- Duplicated services, data, processes, and functions
- Controlled by different organizations within the institution

IBS helps banks to get out of this conundrum. The need of the hour is an architecture that can manage the following critical functions:

- Enables a streamlined environment that is easier to maintain
- Increases transaction visibility
- Facilitates reuse of services, data, and processes
- Improves agility to respond to changing business requirements

Financial Transaction Manager (FTM) integrates, orchestrates and monitors financial transactions in real-time. IBM Financial Transaction Manager for Immediate Payments aligns to the SCT Inst rule book from European Payments Council (EPC), provides 24x365 availability and it is proven scalability over 4,000 transactions per second.

FTM is able to provide shadow banking solution that allows access and updates to the account balances while accounting systems are not online because of closing, batch processing or simply they have lower availability and resiliency.

FTM offers prebuilt, industry-standard capabilities with optional complementary products for Immediate Payments, SWIFT, ACH, SEPA, check processing and corporate payment services.

Uses common integration capabilities for managing financial transactions. Works with the ISO 20022 industry standard. Includes an operational database to track status and integrate with enterprise data management solutions. Provides client and entitlement configuration, transaction ingestion, risk management and distribution along with settlement accounting and granular billing.

SOA infrastructure

IBS EXPERIENCE

Throughout the history of the IT industry, integration has been an important part of most projects. Whether it is integration of transactions, data, or processes, each has challenges and associated patterns and antipatterns. In an age of mobile devices, social networks, and cloud services, and big data analytics, integration is more important than ever, but the scope of the challenge for IT projects has changed.

WHY SOA?

Transforms Core Banking Systems

- Eliminates costly and inefficient point-to-point integration
- Standardize and automate processes
- Integrate anything to anything
- Significant cost reductions and efficiency improvements

Enables Omnichannel Banking

- Easily expose REST APIs for seamless integration between your back-end and front-end systems and applications to create a new personal, engaging experience for your customer
- Fully supports MQTT
- Mobile patterns for rapid development

IBS has more than 15 years of experience in Systems integration and SOA enablement. We turn “spaghetti” into an orchestrated environment! We can teach your systems to talk to each other in a secured and governed way. We can build your digital business API and help you be faster and smarter.

Our solutions are based on industry leading products like IBM Integration Bus, MQ series and Oracle Fusion Middleware.

We use these platforms to connect applications together, regardless of the message formats or protocols that they support. This connectivity means that your diverse applications can interact and exchange data with other applications in a flexible, dynamic, and extensible infrastructure. We build solutions that route, transform, and enrich messages from one location to any other location, while supporting a wide range of protocols: WebSphere® MQ, JMS 1.1 and 2.0, HTTP and HTTPS, web services (SOAP and REST), File, Enterprise Information Systems (including SAP and Siebel), and TCP/IP and a broad range of data formats: binary formats (C and COBOL), XML, and industry standards (including SWIFT, EDI, and HIPAA). You can also define your own data formats.



Digital Banking on the edge

Innova iBanking Solutions

Next Generation Banking

iBANKING LEADS THE INDUSTRY

NF Innova provides unique banking solutions to visionary financial institutions.

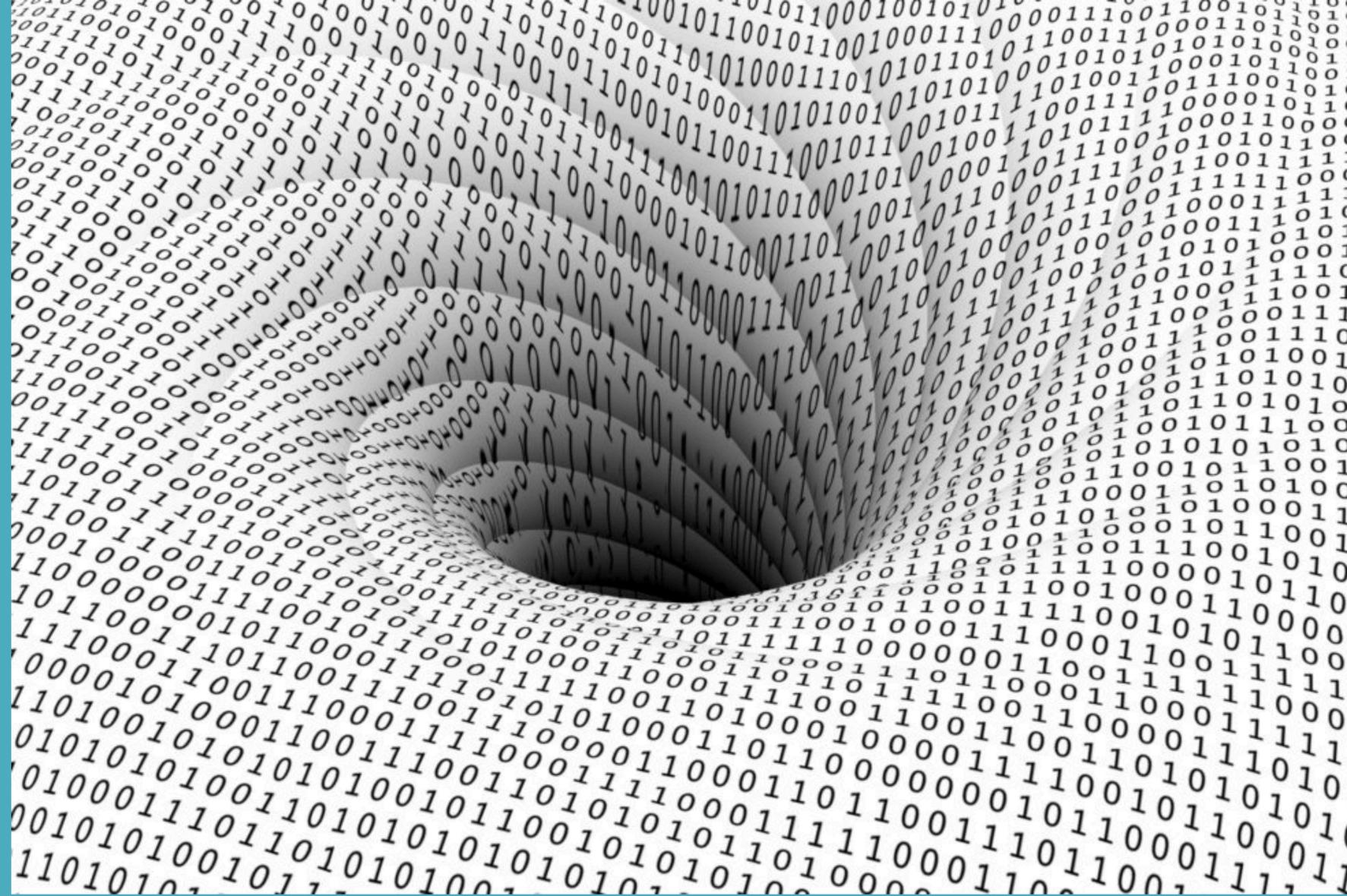
iBanking, a true Omni-channel banking solution from NF Innova, offers Mobile and Internet banking solutions tailored to retail, SME and corporate customers.

The fully integrated digital platform enables you to build real digital branch and personalized real-time services for your customers.

iBanking leads the industry with innovation and true digital evolution. It is adopted by broad range of banks like Raiffeisen, Societe Generale, Banka Intesa, Sberbank, Bankpost, Gazprom bank, VTB24 and others.

iBanking was named Market Leader in IDC MarketScape 2017.

IBS is official representative and integration partner of NF Innova in Bulgaria.



Monetizing Data Assets

BI and Advanced Analytics, Real-Time Scoring, Data models for Finance Industry, Data Warehouse and Data integration, Data Governance solutions, Big Data solutions

Advanced Analytics and Big Data

IBS SERVICES

Digital transformation relies on data and analytics

Data is the new oil. We are aware of that. We are also aware that oil needs to be refined to be of real use. Big Data is the new buzz.

But how much data is Big Data? Big Data is “any amount of data that we are not able to process and turn into value in a meaningful time”.

So it is not about the volume, it is not about the velocity or the structure of the data. It is about our abilities to collect, process and transform data into business insights and act on them fast.

Advanced analytics is based on Predictive analytics and machine learning. The ability to predict events and score in real time is crucial part of digital transformation.

IBS provides services and solution in the areas like:

SPSS modelling

By using the modelling methods on the IBM® SPSS® Modeler modelling palette we can derive new information from your data and develop predictive models. Each method has certain strengths and is best suited for particular types of machine learning problems.

SPSS Automation - Real Time Scoring

IBM SPSS Collaboration and Deployment Services provide the enterprise platform for integrating IBM SPSS products into complete business solutions and enable widespread deployment and use of predictive analytics. The features of IBM SPSS Collaboration and Deployment Services include centralized, secure, and auditable storage of analytical assets and advanced capabilities for management and control of predictive analytic processes, as well as sophisticated mechanisms for delivering the results of analytical processing to the end users and applications in real time.

Behavior based customer analytics

Using IBM Customer Insight for Banking we leverage predictive analytics to help you personalize customer engagement with micro segmentation and deliver customized actions. Advanced predictive models analyze customer transactions and spending behaviour to identify customer needs and propensities, anticipate life events, and provide a unique customer experience.

Hadoop and Apache Spark

Sometimes viewed as competitors in the big-data space, but the reality is that they're better together for your Big Data projects. Utilizing the power of these open source platforms with tools like R and Python we are able to solve any big data challenge.

Business intelligence

IBS HELPS

Business intelligence core purpose is about the creation and distribution of reports and dashboards, with the data coming from any number of data sources of any size, and being distributed to users.

Business intelligence is usually called descriptive analytics, because fundamentally, it is used to answer these very key questions that organizations need to understand their business:

- (1) **How have we been doing?** How has the business performed in the last few days/ weeks or months.
- (2) **How are we doing?** How is my business doing now - my department, my sales force – the current status of my business.
- (3) **Why is my business performing like this?** What are the basic reasons or problems to experience present results.
- (4) **What should we be doing about it?** Business Intelligence helps us take into account the 'current' factors by helping us look forward and determining what should we be doing; helping us address some of the issues uncovered in the earlier questions.

Nowadays it is crucial to provide not only prebuild dashboards and reports, but to enable your power users with self-service business intelligence tools.

Another challenge to consider is Data lineage which is key to BCBS 239, but also an important factor of other regulations such as Dodd-Frank, European Market Infrastructure Regulation (EMIR), Markets in Financial Instruments Directive II (MiFID II) and the Fundamental Review of the Trading Book.

What we provide

IBS helps organizations build and execute their Business Intelligence strategy. Over years business users tend to build their own reports and solutions to help them solve present tasks or to fill the gap between IT services and their constantly arising needs. These trends build information silos in the organizations, different point of views, and very often different misleading results. Having a clear BI strategy will help you to introduce single point of truth in your organization, share insights among users and unlock your data for faster and better decisions.

How we do it

Analytics projects are different, therefore require a different approach to other projects. Agile techniques, extensive business involvement, careful change management and extended scope definition and testing phases have all been proven to be essential. We use proven methodologies that focus on the business strategy and help customers keep focus on that.

The delivery model

We are building flexible BI solutions around your own or industry standard business KPI's. On-premise or in cloud - it is your data and your choice.

What are our customers benefits

Choosing IBS Services for Analytics as partner for your Business Intelligence project brings you the following benefits: trusted advisor to build a strategy with; early and visible return on investment; user requirements can be reviewed and revisited regularly; better control of the project from a delivery perspective; better financial control of the project.

Platforms supported

Our professional services cover IBM and Oracle platforms. Despite of your platform of choice – IBM Cognos or Oracle BI we are able to deliver end-to-end business intelligence projects and mandatory regulation requirements for your bank.

Data Warehousing

IBS PROVIDES

Data Warehouse Engines handle storage, querying and load mechanisms of large database. It is an indisputable fact that implementing a data warehouse is such a very challenging task. This becomes even more challenging and difficult to do when we take into consideration the diversity of both operational data sources and target data warehouse engines.

Data warehouse engines vary depending on the needs of the organization. But it is common today to acquire data warehouse engines that can handle the needs of very big, terabyte-scale business intelligence applications. This will make organizations get faster information to help them achieve success in the competition.

The foundation of a modern data warehousing architecture is the Hybrid Data Warehouse or Logical Data Warehouse (LDW). A Hybrid Data Warehouse, is comprised of multiple data warehousing technologies and platforms so that the right workload is running on the right technology. From Hadoop to on-premises analytical engines to cloud-based data stores, the LDW helps you support proactive decision making, reduce costs, streamline processes, and increase business user agility.

DWH Model is a visual business representation of how data is organized in the enterprise. It provides discipline and structure to the complexities inherent in data management, facilitates communication between IT and the business, It facilitates arriving at a common understanding of important business definitions (e.g what is a customer?)

Prebuild Data Warehouse Models for Banking. They deliver competitive advantage by enabling clean data consolidation across multiple systems and by supporting rapid implementation of warehousing solutions with meaningful data. All Business areas are covered (380 entities (tables) in core). Models are delivered fully documented - over 300 pages documentation, 100 KPI's specific for banking, Descriptions of attributes / entities, with examples (possible values), Database independent.

erwin Data Modeler. The gold standard in data modeling, erwin Data Modeler discovers, designs, visualizes, standardizes and deploys high-quality data assets through an intuitive, graphical interface. With a data model as a roadmap for your data infrastructure, you'll have a centralized view of all your data and its sources, based on a common repository.

IBM dashDB. dashDB is next-generation data warehousing and analytics technology for use in private clouds, virtual private clouds and other container-supported infrastructures. It is ideal when you must maintain control over data and applications, yet want cloud-like simplicity. It includes in-memory processing for delivering insanely fast answers to queries, as well as MPP for scale out and scale up capabilities as data grows.

Oracle Data Warehouse. Whether you choose to deploy a data warehouse on premises or in the cloud, Oracle's high-performance and optimized database technology and cloud solutions enable you to benefit from faster analytics and gain industry-specific insights to drive faster innovation, greater profitability, and better competitive advantage.

IBM® PureData™ for Analytics, powered by Netezza technology, is changing the game for data warehouse appliances. Integration by design Hardware, storage and software capabilities are designed and optimized for specific high performance data workloads such as patented data filtering using programmable hardware (FPGAs) for ultrafast execution of analytic queries without the need for indices.

IBS Professional Services for Analytics are here to support and deliver your Data Warehouse or Data Lake projects, including near-real-time Data Warehouse and Operational Data Store solutions. We can help you build your data warehouse model with a fit for purpose approach - Relational, Dimensional or Data Vault.

Data Integration and Governance

IBS PROVIDES

Data governance is the ability of an organization to manage its information knowledge and to answer questions such as What do we know about our information?, Where did this data come from?, and Does this data adhere to company policies and rules?. Data governance practices provide a holistic approach to managing, improving and leveraging information to help you gain insight and build confidence in business decisions and operations while meeting regulatory requirements.

Data integration is the process of collecting and interconnecting data from various systems in order to ultimately obtain useful information on technical and business processes.

Why it is important for business?

Implementation of data warehouse or an analytical system requires all new and altered data to be retrieved from different operating systems on a daily basis and placed in a single analytical structure.

Poor data integration reflects in poor analytics service with a limited reach. Lack of governance leads to no trust in data or worse - misleading insights - wrong decisions and lost opportunities.

Another challenge to consider is Data lineage which is key to BCBS 239, but also an important factor of other regulations such as Dodd-Frank, European Market Infrastructure Regulation (EMIR), Markets in Financial Instruments Directive II (MiFID II) and the Fundamental Review of the Trading Book

IBS Professional Services for Analytics are experienced in a number of Data Integration tools and technologies. Our consultants have the necessary experience in the use of a wide range of technologies, such as Talend, IBM InfoSphere DataStage and Quality Stage, Informatica PowerCenter, Oracle Data Integrator, and Oracle Warehouse Builder, IBM Change Data Capture, Oracle Golden Gate, which enables us to combine the best technologies by which to achieve the most effective results and provide you with solutions that can help you collect relevant, understandable, and accurate data displayed in real time.

With our help you will be able to:

Build confidence in your data

Deliver clean, consistent and timely information for your data warehouses or big data projects and applications.

Create a flexible governance strategy

We can help you adapt a data governance strategy to suit your organizational objectives, while shaping business information in unique ways to meet your needs.

Modernize and consolidate your systems

Consolidate applications, retire outdated databases and modernize your infrastructure, as well as automate business processes for improved cost savings.

Connect business and IT

Provide a unified platform and documentation that enables collaboration, which can help you bridge the gap between business and IT and align objectives.

GDPR

IBS PROVIDES

General Data Protection Regulation (GDPR), the European Union (EU)'s new data protection regulation, was released in May 2016 with an implementation date of May 25, 2018. Every organization that collects or process personal data on EU residents must comply with the new regulation, regardless of where they are located, or they will face significant financial penalties (up to four percent of their annual revenue) and reputational damage.

Data Security is crucial for bank operations and reputation even without GDPR regulation. A good start is to ensure that you have proven protection on a database record data across all your systems – in production or in test and development environments.

Your business data represents your intellectual capital, competitive differentiator and the lifeblood of your organization. IBS offers data security and protection that empower security teams to automatically analyze what is happening across the data environment.

- **Analyze your data risk**
- **Shield sensitive data from external and internal actors**
- **Rapidly adapt to changes in your environment**

IBM Security Guardium

Support your entire data protection journey with the same infrastructure and approach. IBM Security® Guardium® helps ensure the security, privacy and integrity of your critical data across a full range of environments—from databases to big data, cloud, file systems and more.

- **Analyze your data risk.** Automatically discover and classify sensitive data, uncover usage patterns and assess compliance risks.
- **Protect your critical data.** Extensive audit capabilities, use of encryption, masking, redaction, and dynamic blocking and alerting.
- **Seamlessly adapt to changes.** Support traditional and new data technologies, such as Hadoop, noSQL and cloud.

IBM InfoSphere Information Server

Meet your needs for data governance, integration and quality.

IBM InfoSphere Information Server is an advanced data integration platform that enables you to cleanse, monitor, transform and deliver data. The scalable solution provides massively parallel processing capabilities to help you manage small to very large data volumes. It helps you deliver trusted information to your key business initiatives such as big data and analytics, data warehouse modernization and master data management.

Data Discovery, data classification, meta data management, data lineage are delivered through a single integrated platform.

Concent Lifecycle Management

Consent Lifecycle Manager is an essential tool for Data protection officers, owners of personal data processing activities, as well as for all the other business roles responsible for GDPR compliance in your Company.

Its purpose is to manage the lifespan of all types of consents for customer and non-customer parties as well as provide mandatory information and logic support for triggering processes in downstream systems. Supported processes include Subject Access Request, Right to be Forgotten and Data Portability. Make sure your Company meets the GDPR regulation with competitiveness and a leading edge, and provide security and peace of mind for your users.



Improved Collaboration and Streamlined processes

Enterprise Collaboration,
Document management, ECM, BPM

Collaboration, Document management, HR

IBS PROVIDES

Shift your corporate culture toward a digitally enhanced workplace

Digital transformation is about people as well. Customer centric approach is in the heart of it. The change should start from within. New business models require new ways of thinking and new ways of working. Transparency, connectivity, collaboration, socially engaged teams are some of the ingredients of the mix you need to enforce digital transformation successfully .

In addition Business Applications require constant interactions between employees, thus collaborative solutions are far more productive in the work place.

Many companies are looking for the best approach to transform the workplace. But simply deploying corporate social network or cool new collaboration tools is not sufficient. Culture transformation is not an IT problem.

Corporate social network

Corporate social networks reach the next level in communications, building alliance tools to work with functions that are familiar to us from the social networks such as profiles, files, blogs, wikis, forums, communities, etc. Building a corporate social network in the organization can have a dramatic effect on the engagement and productivity of the teams and on the accumulation of corporate knowledge. The opportunities for development of a common corporate culture, mission and values allows you to build an inspired and motivated community in the company

Business email, calendar, to-dos, contacts, directories and so much more

With IBM and Microsoft technologies we can deliver a simple, integrated, productive environment, elevating business email to so much more. The solution includes products that provide business email, calendar, to-dos, contacts and directories combined with other tools and applications. Whether on premises or in the cloud, IBS can provide you a better social and mobile email experience with the security, dependability and cost-effectiveness.

Integrated platform for document and case management

Any modern document and case management solution should be user friendly, configurable, scalable and extendable. And so is AIDA. Our solution is designed to optimize the workflow, provide paperless processes and deliver unmatched user productivity.

Absence management - TIMEOFF.GURU

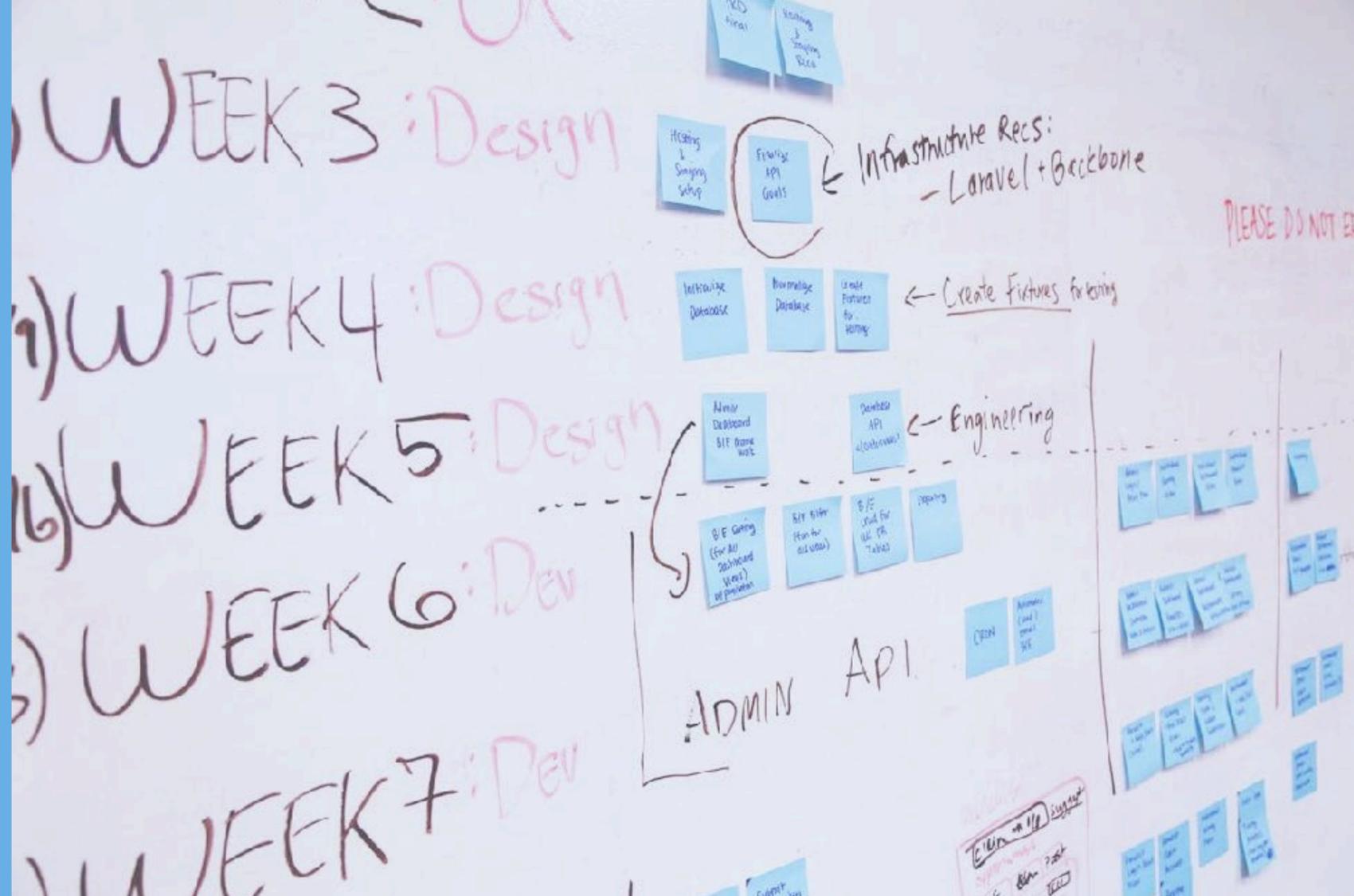
TIMEOFF.GURU helps you save leave of absence processing time and puts you in full control on everything related to time-off for your team and company. TIMEOFF.GURU is our newest cloud solution and can be implemented as is or integrated with ERM.HR.

ERM.HR

When we created the first version of ERM.HR in 2005, our main goal was to collect the information for the IBS team in one place. With time, we added training and education, leave of absence management, recruitment and so much more. After more than 10 years in development, we have a comprehensive solution that covers almost every aspect of the HR processes in the organization.

IBM FileNet

IBM® FileNet® Content Manager provides enterprise content management, enabling you to manage your organization's content and documents. The scalable software offers lifecycle management, transactional content processing, document management, content consolidation, content based application development, and compliance and governance. It helps you gain secure, mobile, anytime access across your content stores and supports your business processes.



Software Development

Developing for the digital era

Software Development

WHY IBS?

Why IBS Software Development?

We deliver and we care. We are not an outsourcing company. We care for your business, that is why we strive to get to know more about it. Its not about the software and technologies, it is always about people, ideas and vision.

We have build many different systems. Some of them collect transactions for billion euros, others handle million of documents and tasks.

Designed to last

Every software starts from architecture design. We pay serious attention at the software design phase. Our experience in large complex projects, cloud enabled systems, security, different database technologies and big data concepts are helping us design long lasting solutions.

Smart software development

Whether you need new system or modernization or extension of an existing one we deliver solutions that rely on industry-standard techniques that make more economical to develop, support, and upgrade applications.

Systems integration and SOA and API enablement

We turn “spaghetti” into an orchestrated environment! We can teach your systems to talk to each other in a secured and governed way. We can build your digital business API and help you be faster and smarter.

Portals and mobile

Exceptional user experience is the ultimate goal of any digital transformation. We build enterprise web portal solutions on IBM Websphere Portal and mobile apps that run everywhere.

Our Approach

We have one focus - your goals. We achieve them together. You bring your ideas and challenges we bring our skills and passion, best of breed software technologies and open industry standards.

Full Cycle Development

We provide a full range of services in software development from requirement gathering, user interface design and implementation, to product release and continuous development.

Great Business Analytics Skills

We enable detailed elaboration of our customers’ business ideas in order to help them set realistic expectations around timescales and budget.

Superior Customer Service

We provide complete project transparency, extended business hours and always on responsive service desk available for immediate assistance.

A family of your own

We build long lasting relationships. We team with your team to work together, dream together, grow together.

Certified Experts

Our highly skilled developers, analysts, testers and project managers have been awarded more than 100 professional certifications from IBM WebSphere, Information Management, Analytics, Oracle; RedHat; PMBOK; BABOK; ITIL; TOGAF and ISTQB.



Infrastructure for the digital bank

High-end computing, All-flash storage, Software-defined datacenter, Data protection and DR solutions

Infrastructure

WHY IBS?

Infrastructure matters in a digital world!

Need to build a private cloud or looking for a way to optimize your IT infrastructure, and at the same time to reduce opex and maintenance costs? We are here to help! Trust on experience. We help hundreds of enterprises to build and run their infrastructure.

Cloud Infrastructure

Infrastructure for your private cloud or Infrastructure as a service. Dedicated or shared - always with our first class managed services. Keep your costs down and your infrastructure up and running.

Storage

Only the best storage solutions tailored to your needs - speed and performance. Software Defined. All-Flash, Hybrid, High-end.

High End Computing

IBM Power Systems offer servers built with open technologies and designed for mission-critical applications.

Secure Hosted Virtual servers

We provide secure virtual servers through our own datacentre. Built on enterprise hardware from IBM and Lenovo and vSphere, VMware's server virtualization platform, to maximize device utilization and leverage features like resource scheduling, load balancing, live migration and disaster recovery. You can rent a server for test and development or we can host your entire business. Optionally you can have encrypted VM's to lock down and secure your data.

Data Protection

Get confidence that all your data is protected, with capabilities to support software defined, virtual, physical and cloud environments, core applications and remote facilities.

Cloud Platforms

Hypervisors, operating systems and tools to manage your private cloud. We are VMware Enterprise Partner, Microsoft Gold partner and RedHat Advanced Partner. We can build your cloud with your platform of choice.

IT Systems Management

Private or cloud your Infrastructure still demands your attention. We provide comprehensive solutions for monitoring, security and management.

Personal Computing

Personal Computing continues to play major role in our life and business. We are #1 Lenovo corporate PC provider and Think support centre in Bulgaria.

Work with a trusted provider

We know cloud. We have build hundreds cloud solutions and we are taking care for many of them. We know this is serious business. Thats why we are implementing best security and quality measures in place. Our management system comply with ISO 27000 and ISO 20000 standards.

Manage your business and have a life. We will manage your cloud. Our cloud experts bring years of experience running complex workloads and resolving issues before they halt operations.



Consulting and training

PSD2 and API Economy, GDPR, Digital Transformation, IBM and RedHat Trainings and Certifications

GDPR Assessment and PDO trainings

We can help your organization with a variety of best-practice solutions, from evaluating your GDPR compliance position and developing a remediation roadmap through to implementing a best-fit data compliance framework. We offer the following services:

- **GDPR gap analysis** - You're uncertain how much your organisation complies with the GDPR? Get a detailed assessment showing your organisation's current GDPR compliance position, and a remediation plan to address the gaps and risks.
- **GDPR data flow audit** - You're not sure what personal data you hold or where it resides? Get an inventory of the personal data held and shared by your organization, and a data flow map of your processes.
- **Data protection impact assessment (DPIA)** - You don't know the data protection risks of introducing a new system or process? Get an assessment of the data protection risks associated with your new process and a remediation plan to mitigate those risks.
- **GDPR transition services** - You need help implementing your GDPR compliance project? Get support adapting your existing data protection programme to the GDPR.
- **In-house GDPR training and awareness** - You need to make sure that staff and management understand their responsibilities under the GDPR? In addition to our certified GDPR training courses, we deliver awareness sessions specifically tailored to your organisation's requirements.

Digital Transformation Consulting in Banking

Is digital a threat or an opportunity? It is both, especially in the case of banks and financial institutions. Banks and finance institutions are using digital technologies to refresh old-fashioned branch networks and offer mobile and customized solutions to their account holders. But digital also increased competition in the sector, opening the payment market to players coming from retail, telecom and IT.

By partnering with New Frontier Group we provide seamless end-to-end support to help our clients to accelerate their digital transformation and quickly realize financial upsides.

▶ **Digital Transformation Strategy**

A revolutionary approach implies a much more fundamental shift of the underlying business model, typically creating a multi-sided business model with a radically extended number of partners in your business ecosystem. Such a digital transformation must build on the power of networks and information.

▶ **Digital Transformation Workshop**

Instead of using technology as a starting point for improving or building up mobile, social, big-data, and cloud (also commonly called SMAC) capabilities, it is critical to pursue a holistic approach and develop a digital strategy that complements and extends the enterprise's overall strategy.

PSD2 and API Economy workshop

To succeed in the API economy, organizations must understand the driving forces behind it and the new business models and monetization strategies it can help create. Key drivers and enablers of the API economy are creating new API business models and monetization strategies.

To help you move forward with your API journey, as IBM Platinum Business Partner we can organize an IBM API innovation workshop. In this workshop, you work with IBM consultants in exploring potential use cases for API adoption from business and technical perspectives. You also define a high-level solution and create an adoption roadmap.

Consulting

WHY IBS?

IBM Professional Training

LearnQuest catalog offers an extensive IBM course catalog featuring DB2, Informix, Bluemix, Cloud, Watson, UrbanCode, Cognos, SPSS, Infosphere Datastage, Rational, IBM Notes&Domino, System Z, Tivoli, Watson, Storage, Power Systems and AIX, Security, Websphere, and many more.

Our IBM Authorized courses are delivered in classroom or online, self-paced or instructor led, and can be customized for our clients.

IBS is official LearnQuest business partner - #1 IBM WorldWide Training Partner.



IBS is Advanced Business Partner and Certified Training Partner of RedHat.

We deliver RedHat Professional Training and Certification Labs on Red Hat Enterprise Linux, JBoss Enterprise Middleware, Red Hat Enterprise Virtualization and more.

Redhat Training and Certification labs

Training. Invest in your skills or the skills of your team with our hands-on, role-based training for IT professionals and developers. Master key tasks for Red Hat Enterprise Linux, JBoss Enterprise Middleware, Red Hat Enterprise Virtualization, and more.

Certification. Red Hat® certifications are most valued Linux certifications in the industry. Redhat certification program gives employers a way to find and develop qualified professionals and allows technical professionals to prove their skills and build their careers.



About IBS



Short Profile

IBS is an IT Consulting, Systems Integrator and Software Development company founded in Bulgaria. We are servicing the best businesses and government agencies since 2003. Our belief is that digital data and technologies are changing the ways we live and work and we are proud to lead this transformation for our customers.

www.ibs.bg

Customers from Banking Industry

- Raiffeisen
- Unicredit Bulbank
- OTP DSK Bank
- Eurobank (PostBank)
- United Bulgarian Bank
- BACB
- Piraeus Bank
- BORICA

Key partnerships



Key facts

Established

2003

Turnover 2016

25M

Team of

80+

Sofia
Plovdiv
Varna
Skopje

ISO
9001
20000
27000



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