in'VALOORES,
Be the Change you Want to Be,
and Make a Difference ...

VALOORES V20
DELIVERING Next Gen

Machine Learning
Advanced Analytics
BLOCKCHAIN
Digital Identity
Cybersecurity
Robotics
Robo Advisor
Digital Information Management

VAL∞RES

*There is No **Gain**, without **Pain**,*
*… Based on a Solid **Information Integrity***

We Deliver Advanced Analytics-Based Governance,
Risk, and Compliance Solutions to Financial Institutions, Central Banks,
Banks, Insurance... It's been over 30 years of Success now.

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VALOORES - A Brief Summary in few Lines

VALOORES empowers decision making, helping people and businesses around the globe reach their targets. Founded in 1989 in France, the Company is a pioneer in Master Data Governance, Retail & Merchandising, Supply Chain Optimization, KYC, Regulatory Compliance, Financial Crime - AML & Fraud, Predictive Analytics and Data Science to improve their on-going operations, executions and decisions.
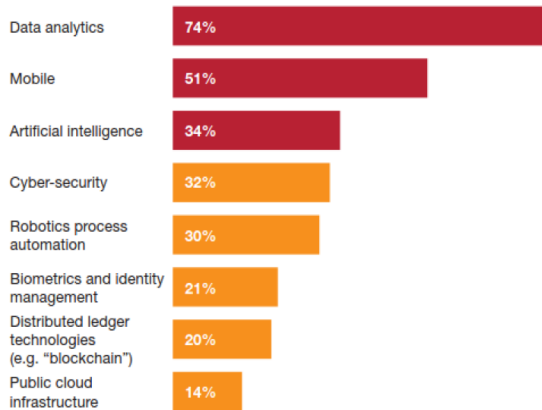
VALOORES Next Gen V20

VALOORES R&D harnesses its value-based competencies to streamline its Technology stack and Design frameworks with the market's latest trends, and leverages its road map emanating from our lessons learned with our progressive Tier 1 customers around the globe.

VALOORES announces a **Next Generation** ecosystem that marches at the same drum with the latest Digital Transformation guidelines, to align with the metamorphosing Business models, benchmark Data Readiness, and explore Data Challenges when addressing Complex and Changing Business requirements.

VALOORES embraces the "*SECOND WAVE*" of FinTech, RegTech, & GovTech Trends

VALOORES embraces the "*Second Wave*" by focusing on the trends with highest potential within such a vibrant ecosystem.

What are the most relevant technologies for your business that you plan to invest in within the next 12 months?

Data analytics	74%
Mobile	51%
Artificial intelligence	34%
Cyber-security	32%
Robotics process automation	30%
Biometrics and identity management	21%
Distributed ledger technologies (e.g. "blockchain")	20%
Public cloud infrastructure	14%

Source: PwC Global RegTech Report 2017

Most Relevant Technologies

VALOORES BI & AI - Machine Learning & Advanced Analytics
VALOORES technology analyzes large data sets to identify patterns and respond to them. Descriptive, Diagnostic, Predictive, and Prescriptive Analytics are at the heart of the Analytics engine, to research human behavior and plot

Behavioral Analytics.

VALOORES BLOCKCHAIN
VALOORES BLOCKCHAIN saves back office costs by eliminating mistakes, increasing the efficiency of the ledger, and enhancing the transparency and security of data; all that as the P2P network of computers supporting the BLOCKCHAIN is decentralized, the transactions recorded are permanent and cannot be altered. Blocks (transactions) are added chronologically, Transactions are permanent and cannot be altered, enhancing the transparency and security of data.

VALOORES Digital Identity
VALOORES introduced its Digital ID framework using controls to monitor the identity of individual users of a network; VALOORES Digital Identity Management allows or limits access to systems and data, to simplify organizational operations and enhance customer experience.

VALOORES Cybersecurity
VALOORES delivers its Cybersecurity solutions, to help Financial Services Providers protect their systems from phishing, business email compromise, ransomware, and distributed denial of

service (DDoS) attacks; all that, due to the heightened risk of cybersecurity threats.

VALOORES Robo Advisor

VALOORES Robo Advisors provide automated advice to improve customer service with minimal human intervention, allow investment advisors target the mass affluent as a new customer base, among many other applications.

VALOORES Robotics

VALOORES Robotics is designed to apply logic driven algorithms, to perform high volume, low value added tasks, instead of humans. Robotic Process Automation (RPA) can manipulate data and interact with other systems, improving quality, speed and agility.

VALOORES Digital Information Management

VALOORES leverages Master Information Management with the Digital Asset Management (*store, share, and organize digital assets in a central location*), Consent Management (*collect and handle users' consents, manage data subjects' requests and pass all consent-related data to the respective ad partners*), and Mastering the Identity Management.

VALOORES BI & AI - Machine Learning & Advanced Analytics

The Financial Services industry is witnessing significant growth in the use of Machine Learning and Advanced Analytics as a result of improvements in Artificial Intelligence (AI), where machines get "smarter" by analyzing and learning from large data sets.

With advances in Big Data, Cloud Computing, and Processing speeds, VALOORES is implementing cognitive computing and machine learning to perform advanced analysis of patterns or trends, especially in cases like using AI to spot nonstandard illicit financing behavioral patterns; Compliance, Financial Crime, Anti Money Laundering; examining financial transactions to prevent and detect irregular issues.

VALOORES Machine Learning & Advanced Analytics Engine can quickly discover trends and respond to them, helping organizations enhance and streamline their products, services, and operations, in new innovative and progressive ways.

Financial Institutions see Big Data Analysis as most relevant to their business, given that they already have access to large data sets.

VALOORES is revamping large institutions' systems with its Data Analytics competency, to inform their Decision Making, predict risk using advanced analytical risk models (i.e. IFRS 9 for Expected Credit Loss, analyzing credit markets to provide insurance to potential customers), improve pricing and customer targeting, institute efficient underwriting, reduce operational costs, highlight best trading strategies, identify Money Laundering and Fraud Patterns that are hidden analysts, shed light over profitability opportunities, among many other applications.

VALOORES is reshaping the role of analysts at financial institutions. VALOORES Analytics engine spans state of the art analytical tools to combine natural language, with graphical user interfaces and secure cloud computing; it produces fully automated analytical

reports that would take human analysts days to assemble.

VALOORES' Platform as a Service (PaaS), with its high performance computing algorithms, helps manage unstructured and complex data issues. VALOORES' Platform quickly analyzes massive quantities of data to run complex models at low cost. These models help financial institutions perform simulations, what if analysis, and back testing, to identify insights easier and faster, using historical information.

With the volume of scattered data growing daily, VALOORES, with its robust Data Governance on top of existing legacy tech stacks, delivers greater and more meaningful aggregated insights to Financial Institutions, and scales to the global customers' use cases.

VALOORES BLOCKCHAIN

VALOORES BLOCKCHAIN is disruptive and eye opening to the RegTech spectrum, especially as the industry is continuously finding new areas where this technology can be applied. VALOORES BLOCKCHAIN saves back office costs by eliminating mistakes, increasing the ledger efficiency, and enhancing data transparency and security.

BLOCKCHAIN is a decentralized ledger that is made up of blocks (transactions), which are chronologically added to the BLOCKCHAIN. Transactions are independently verified before being added, meaning that there are no data issues identified after the fact in previous ledgers. On the other hand, the BLOCKCHAIN's P2P network of

computers is decentralized, which makes recorded transactions permanent and cannot be altered.

VALOORES BLOCKCHAIN applications in the Financial Services Industry span, not just accounting and payment processing, but also a distributed ledger technology to improve compliance checks (Digital KYC, Due Diligence, Risk Based Approach, and AML), placement, claims settlement, information security, prediction, detection, and analysis of Fraud, process automation (i.e. identify Collateral and return it to Borrower at the end of the lending arrangement, reducing manual intervention and the risk of error), alongside a myriad of other applications.

VALOORES BLOCKCHAIN & Ethereum
Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud, or third party interference.

VALOORES Launched its *Ethereum Wallet* that is a gateway to decentralized applications on the Ethereum BLOCKCHAIN; allowing users to hold and secure *ether* and other crypto-assets built on Ethereum, as well as write, deploy and use Smart Contracts.

VALOORES BLOCKCHAIN & The Ledger Database
VALOORES embraced Amazon's Quantum Ledger Database (QLDB); a fully managed ledger database that provides a transparent, immutable, and cryptographically verifiable transaction log, owned by a central trusted authority.

Amazon QLDB tracks each and every application data change and maintains a complete and verifiable history of changes over time. Amazon QLDB is a new class of database that eliminates the need to engage in the complex development effort of building your own ledger-like applications.

With QLDB, Data change history is immutable; it cannot be altered or deleted. QLDB uses an immutable transactional log, known as a journal, that tracks each application data change and maintains a complete and verifiable history of changes over time.

VALOORES Digital Identity Management

The cost to comply with Know Your Customer (KYC) and Customer Due Diligence (CDD) rules is exponentially rising through the roof, although the operational functions behind these requirements are generally identical at each of the financial institutions.

VALOORES is disrupting traditional compliance operations, in how to accept and manage clients, by leveraging distributed ledger technology and sharing Digital Identity data. Identity Management involves controls to monitor the identity of individual users of a network, to either allow or limit access to systems and data.

VALOORES is also disrupting the process of Onboarding new clients, governed by complex and lengthy procedures around Anti-Money Laundering (AML) and KYC, as well as user access controls. That is mostly in the Banking, Insurance, and Asset Management industries.

VALOORES RegTech breakthroughs in Digital Identity Management simplify organizations' operations and enhance customers' experience.

Examples of VALOORES' Digital Identity Management

VALOORES Digital Identity is a collection of electronically captured and stored identity attributes that uniquely describe a person within a given context and is used for electronic transactions. It provides remote assurance and manages the lifecycle of individual digital identities.

A person's digital id is composed of a variety of attributes, used as authentication factors.

- Biographic data (e.g., name, age, gender, address)
- Biometric data (e.g., fingerprints, iris scans, face recognition, hand prints)
- Credentials issued by the service provider (e.g., unique ID number, eDocument, eID, mobile ID)

Other attributes that are more broadly related to what the person does or something someone else knows about the individual.

- By using a BLOCKCHAIN-based database of personal data, shared amongst financial institutions or government bodies, customers / citizens only need to complete the relevant paperwork and AML/KYC check once, significantly speeding up the onboarding process.
- VALOORES BLOCKCHAIN services bring additional benefits such as the distributed ledger's, as in data protection and real time processing; this means that individuals can control and manage their own personal data,

rather than the organization.

- o VALOORES leverages distributed ledger technology to balance out the priorities of personal data security and transparency. Using a virtual container, users can pre-approve financial institutions to access their data and ensure that their personal information used by these institutions is accurate and up to date.
- o The shared BLOCKCHAIN ledger contains cryptographic proofs that prove that the data is valid, including an audit trail of anything that has changed.
- o Not only does this promote a better client experience and enable clients to control their data, it also eliminates redundant compliance checks and helps institutions using the data to meet the strict new privacy rules. These regulations can include costly fines for businesses.

- Organizations can also incorporate digital signatures, further improving the customer experience.
- Automate customer analysis and target products based on individual risk profiles, reducing risk for businesses; i.e. enhance the credit process by using nontraditional metrics to determine applicant creditworthiness.

VALOORES Cybersecurity

With the increase in technology based business solutions, there's an incremental risk of Cybersecurity threats.

With the regulatory focus and ever changing technologies, planning cybersecurity upfront is instrumental to protect systems and data. The regulatory focus though is not surprising, with cyber standards from the NAIC, the CFTC, the NYDFS, in addition to the FED, OCC and FDIC, proposing rulemaking on cyber risk management standards, beside further emphasis on the transparency of cyber risk management procedures (not all aligned which makes compliance more challenging).

VALOORES Cybersecurity is specialized in assessing, monitoring, and testing third party vendor protocols and standards, alongside offering security hardening solutions, to address attacks like business email compromise, ransomware, distributed denial of service (DDoS), alongside challenges like increasingly complex technologies, rising threats from foreign nation states, and the need for clear regulatory guidance.

VALOORES Cybersecurity is partnering with specialized firms like "**VERACODE**" to navigate cyber related risks. For instance, "**VERACODE**" is used to improve the security of the customer's web, mobile, and third party enterprise applications, with products and services like static analysis, penetration testing, third party vendor security, remediation

coaching and security program management, all of which enable businesses to identify, understand and respond to threats quickly.

VALOORES embraced the latest **Spring Security** framework that focuses on providing both authentication and authorization to Java applications.

- Like all Spring projects, the real power of Spring Security is found in how easily it can be extended to meet custom requirements
- It's a powerful and highly customizable authentication and access-control framework
- It spans the following features
  - Comprehensive and extensible support for both Authentication and Authorization
  - Protection against attacks like session fixation, clickjacking, cross site request forgery
  - Servlet API integration
  - Optional integration with Spring Web MVC

VALOORES Academy also partners with customers to improve education in this area, and develop a talent pool of cyber professionals. Information sharing and R&D are used to support policy development.

VALOORES Robotics

Financial Services have traditionally relied

on considerable back office teams, or even outsourcing, to process and reconcile transactions, may it be using dated technology or even through manual efforts.

VALOOORES introduced its Robotic Process Automation (RPA) capacity to the RegTech landscape, to the institutions' center of excellence structures, to streamline operations.

With VALOORES RPA, high volume, rule-based tasks can be performed quickly by a logic driven framework that learns without human input.

VALOORES RPA can autonomously handle both, structured and unstructured data; manipulating data, taking action, and interacting with other systems. It's localized to a Business Unit or Function, and can react quickly to changes or opportunities as they emerge.

VALOORES RPA is expanding to areas such as digitizing loan processing, regulatory information (i.e. CCAR stress testing), Client and Regulatory Reporting, account opening processes (KYC & Anti-Money Laundering), data remediation initiatives, and even coordinate vendor contracts, create policies and procedures, and address operational risks.

It brings quality and control improvements, ease of deployment, enterprise speed, and agility.

VALOORES Robo Advisor
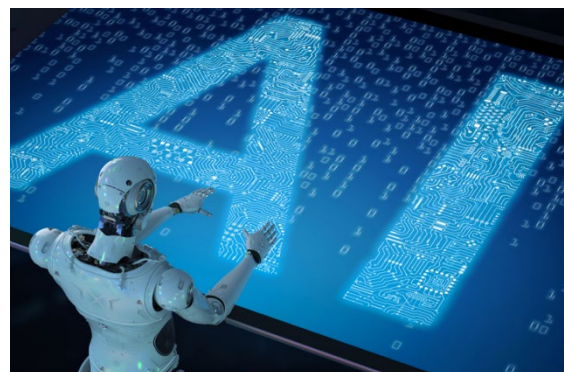
VALOORES Robo Advisor is transforming the Financial Industry over an easy to use platform, by providing automated and tailored advice on Governance, Risk, Compliance, Profitability, and enhanced customer service, with minimal human intervention; for instance, VALOORES Robo Advisor has opened up new opportunities like targeting the mass affluent as a new customer base, due to the possibility of increased margins.

VALOORES Digital Information Management

Digital Asset Management
VALOORES Digital Asset Management is a platform that stores, shares and organizes digital assets in a central location. It amplifies the benefits of creative files such as images, videos and other media.

VALOORES Digital Asset Management allows organizations that deal with media-rich content to create, manage, archive, repurpose and manipulate digital media assets such as images, videos and documents. It organizes digital assets by assigning metadata, that contains a unique description to each asset, making it more searchable, filterable and manageable.

VALOORES Digital Asset Management features:
- Organize Digital Assets in a central location
- Automates workflows and enhances team creativity
- Locates media files quickly using sophisticated search capabilities
- Manages press kits and picture collections
- Automates watermarking for images
- Manages permissions through extensive copyright functionality
- Tags images automatically and uses facial recognition

Consent Management
VALOORES Consent Management platform provides publishers with a tool to collect and handle users' consents, manage data subjects' requests and pass all consent-related data to the respective ad partners. It leverages the capacity to inform users what kinds of data they want to gather, and to ask for their consent for particular processing purposes.

The introduction of the **GDPR** has brought many changes to the digital ecosystem. Questions, doubts, and concerns about defining and handling personal data are among them. The aim of the GDPR though (EU data protection regulation) is to protect the privacy of all EU citizens in an increasing data-driven world.

The EU-GDPR sets high standards for how consent is obtained. VALOORES offers functions, which are not only GDPR and CCPA compliant, but also a flexible, user-friendly access to the accepted and versioned consents.

All relevant issues concerning consent management are covered by VALOORES "all-in-one" Consent Management.

Everything is offered from Cookie Consent to personalized interactions during registration (or login) to action-based consent collection in the process (e.g. when passing on personal data to third parties).

Consent and permission can then be centrally managed via APIs and the intuitive Admin UI.

Mastering the Identity Management
VALOORES Identity Management manages identities across different directories, databases, and applications in On-premise environments; that is based on the Microsoft Identity Manager business processes and the employee lifecycle.

It provides the capacity to prepare identities stored in the local Active Directory for cloud synchronization (for SaaS application access). It helps with domain / forest consolidations, attribute normalization, and preparing complex group management based on policies and workflows to control access to SaaS applications.

VALOORES - Future Outlook

VALOORES is proud of the VBS success achieved till now; a myriad of solutions implemented in multiple lines of business so far. VALOORES is determined to innovate and solve Governance, Risk, Compliance, Profitability Problems and emerging challenges downstream.

VALOORES continues to partner with Regulators (Central Banks, Financial Information Units…) and Industry Catalysts (Thomson Reuters, Financial Integrity Network…) around the globe, and on board more Compliance and Financial Crime Experts, professionals, engineers, business analysts, and data scientists, to push the boundaries of Compliance, through **FinTech**, **RegTech**, & **GovTech**.

The Global Outlook has considerations for Governments and Financial Institutions on their journey toward a 21st century Governance Risk and Compliance framework

Here comes VALOORES Added Values, to Walk with you, and stay this minute in advance of the Governance, Risk, & Compliance Headwinds…

VAL OORES

Over 30 years of successful deliveries **déjà!**

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