EBANK.NET

Next Gen Digital Banking

WHITE PAPER

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OVERVIEW

ABOUT EBANK.NET

eBank.net is an enterprise omni-channel Online banking solution that enables Banks to provide full range of banking services and content to customers with different user profiles, efficiently and reliably.

eBank.net features Web and Mobile as main online channels but may also integrate heterogeneous and independent additional subsystems such as Call Center (IVR and live agent), Distribution channels (SMS, e-mail, fax), chat-bots, robo-advisors, open banking APIs, etc. into a component solution based on uniform security infrastructure, common administration and shared integration layer to Bank's core financial information systems. The solution offers complete set of banking functionality covering services for retail, private, small and medium businesses and corporate customers.

eBank.net offers flexible feature configuration policy. The Bank may select and configure any combination of channels and features. Open application framework and custom development options allow implementation of specific functional requirements. Every eBank.net deployment project targets best balance in functions, performance, stability, integration and usability, on the highest security level.

COMPANY AND PRODUCT ADVANTAGES

A leader in online and mobile banking.

Company implemented Internet banking solutions for the Top Tier CEE banks, including 4 of the current top 6 in Bulgaria. Customer list includes UniCredit Bulbank (UniCredit Group); DSK Bank (OTP Group); Raiffeisenbank (RBI Group); Postbank (Eurobank Group); TBI Bank (TBI Group), BACB, also specific implementations in BORICA (Bulgaria) and CaSys (Northerrn Macedonia).

Online banking specialist.

As it is the core company business, Dais Software focuses to constantly research, develop and introduce broad range of banking functions, security, technology and modern Web experience, so the development roadmap in business features and technology can ensure continuous evolution and longest lifecycle.

Richest feature set on the market.

In addition to the standard default set of basic account info and fund transfers provided by all vendors, eBank.net offers much more advanced features - to name a few: full support for both retail and large corporates; support for the largest number of customer security options (OTP devices, digital certificates, SMS TANs, etc.); customer activity log and behavior analytics (BI); B2B features (customer ERP integration, e-invoicing) and a number of others.

Maturity and stability.

Since the initial version more than 15 years ago the system has gone through several generations gaining invaluable experience from large volumes on live operations while constantly improving and adopting new technology and functionality. Current live sites handle users in the in the hundreds of thousands range and daily transactions for millions of Euro.

Integration experience.

While focusing entirely on online banking software, the company developed extensive practice in integration technologies to core banking systems. eBank.net has been well integrated to FIS Bankway International; Oracle FlexCube, Finastra (Misys), Fiserv, Delta Informatique and a number of local systems.

Custom strategy approach and custom development.

Complete e-banking implementation strategy includes full synchronization to Bank's business priorities and specifics. Broad financial and e-services know-how and dedicated software development team allow flexible and effective implementation of specific functional and system requirements thus removing limitations typical of fixed-functionality products and solutions.

Reliable support and flexible upgrade policy.

Company's support and maintenance services have proven their quality on the rare occasions while emergency situations had to be covered. Standard support package includes business-critical support and bug fixes.

PRODUCT HIGHLIGHTS

Features	Benefits
Full banking functionality	
Full bank products information and management (accounts, deposits, loans, cards, and other)	No feature cuts in solution deployment
	Complete match of functionality to the bank's business
Complete coverage of funds transfers and payments, including full-featured Bill Presentment and Payments (EBPP) platform	Full coverage of bank's custom requirements
	Fastest time-to-market
B2B services (e-Invoicing, online factoring, corporate ERP system integration interfaces)	... more than 100 banking features built over years of real-world online banking experience
Loan origination, Online applications and requests	Unlimited custom development options
User-oriented	
Usability features, preferences, look-and-feel	Better service acceptance by customers
User-friendly customer interaction interfaces	Approval by modern internet-oriented users
Terminology respective to the country of service	Easier user education and support
Multi-country and localization-ready	
Native Unicode and unlimited languages support	No local limitations
Native multi-currency	Possibility to use one solution to multiple countries
True omni-channel integration	
Common business and technology design	Reduced operation and support costs for multi-channels
Channel communication and synchronization bus	Consistency of data on all channels
Business development features	
Single site or separate customer segment sites	A single solution covers individual bank customers, small and medium businesses and corporate
Reporting and BI analytics on customer behavior	Service offering optimization and cross selling options
Advanced software architecture and technology	
Advanced service-oriented multi-tier architecture	Availability and scalability
Contemporary technologies	Long lifecycle and basis for future technology updates
(latest versions of respective OS, RDBMS, system frameworks and development platforms)	Multi-site deployment options
	Stability and performance
Security	
Richest set of customer security options	Security level appropriate for financial transactions
Application and Infrastructure security	Optimal customer fraud protection
Logging, auditing and analytics	Compliance to legal regulations
Operation features	
Minimum maintenance	High availability
Backup and recovery procedures	Business continuity
Optimal interoperability to core banking systems	Real-time banking
Full-featured administration	Better customer administration and support service

Feature Guide

eBank.net offers complete feature sets for banking services, user experience, integration, security and administration.

Web Framework

User Interaction	
Customer web site	Web site presenting banking functionality to customers
(optional) Customer segment oriented UI	Optional configuration of different separated sites with specialized user interfaces (Web) according to target bank customers in different business segments - retail, private, SME, corporate - according to Bank's customer segmentation, with different sets of features and presentation
Custom Web design	Custom graphical design created specifically for the Bank, according to its corporate style and requirements - different from "logo change" concept of fixed products

General Banking

Information Services

Info: Bank accounts	
Account list w/ type indication	Current (checking), savings, special accounts, with respective attributes and details; Constraints "account type - allowed activity"
Detailed account position	Account balances (book and available); turnovers; overdraft limits
Account movements	List of transactions on account, with rich filter options: debit/credit (to/from); by type - internal, inter-bank, in foreign currency (SWIFT), cash operation, etc.; search features - for period - start date/end date; by number of last movements; search by beneficiary; in amount range
	Account statement – daily, monthly (or other fixed period and format)
Aggregated balance	Total balance on accounts recalculated in a specified currency
Available and blocked amounts	Available amount on account with information about holds and blocks
Transaction details and advices	Details on transaction with visualization of advices where applicable (on internal and local payments – BISERA/RINGS; State Budget, SWIFT advices)
Account interest	Account interest information
Term deposits info	Extended information for period; maturity and interests

Info: Bank cards	
Credit (and debit) cards info	Balance, Limits, interest, Due amount, Date; Minimum Repayment
Card statements	Detailed card transaction information (online if supported by core)

Info: Loans and credit lines	
Loan report	Amount, principal, interest, maturity, overdue, last and next payment dates
Loan schedule	installment schedule, executed and pending payments

Info: exports	
Exports	Export of reports to .PDF, XLS, .DOC, .CSV, .XML files
Printer friendly	Printer-friendly form of table reports, where applicable

COMMON PUBLIC AND/OR PROTECTED INFORMATION

General and dynamic info	
Currency rates	Detailed currency rates information, ask/bid book, cash; Currency calculators and converters; Rates history
Interest rates	Detailed interest rates information on standard and special accounts
Taxes and fees (bank tariff)	Static bank tariff information for taxes, fees, terms and conditions; Option for tariff formalization and dynamic info
Tariff calculators engine	Tariff formalization and dynamic info - calculators and wizards on formalized bank tariff
Loan calculators	Full-featured configurable loan calculators, wizard style with support of different types of loan installment schemes and fees, APR calculation and installment schedule generation
Deposit calculators	Full-featured deposit calculators
Protected documents	Access to protected documents for registered customers - bulletins, briefs, comments and analyses from bank experts

ACTIVE OPERATIONS

Active: payment operations	
Local payments	Credit payment orders – internal and inter-bank ; Payments to State budget (if applicable); express option (i.e. RINGS in BG bank payment system)
International payments	Payments in foreign currency to local and international beneficiaries (SWIFT, SEPA)
Direct debit	Direct debit order (request)
	Direct debit register; management (review received; approve; cancel)
Budget payments	Payments ordered by State budget organizations (if applicable)
Law regulations constraints	Complete set of validations according to current State and National Bank regulations on payment order attributes, limitations and required supplements, declarations for national bank statistics, anti-money laundry, full IBAN regulations compliance

Batch (mass) payments	Import, parsing, processing and execution of multi-record payment orders (local and international, incuding SEPA)
	Full processing, formal control and processing log;
	Supported built-in formats (BISERA standard, flat file) and option to add new import formats
	Payroll file upload and processing

Active: Funds transfer	
Currency exchange	Currency exchange between own accounts; Option for interface to Treasury department for preferential rates and advanced FX deals
Accounts funding	Money transfer between own accounts for purposes of current, savings, card account funding, etc.; credit card recharge; prepaid card recharge;

Active: Templates and payment transfers management	
Beneficiary database	Save and manage local and international beneficiaries for payment operations, with respective attributes
Payment templates	Save and manage payment operation templates
"Create similar" option	Create new payment operation with attributes copied from an existing one
Payment scheduling	Options for execution date and expiration date of payment order
Recurring payments	Save, schedule and manage templates for regular payment creation

Active: Money management	
Opening and management of time deposit	Opening of deposit with funds from current account; Closing of deposit or change of deposit terms on maturity dates
Account opening	Online account opening application
ZBA and sweep accounts (*)	Operations on Zero-Balance accounts and fixed balance accounts

Active: Loans and lines of credit	
Loan origination application	New loan application, with state tracking option and integration to internal workflow engine, if any
Loan utilization	Loan utilization request
Loan re-payment	Loan re-payment operation

Active: Bank cards	
Bank card request	Requests for debit and credit card issuing
Limits and conditions change requests	Requests for change of transaction, daily or weekly limits and other conditions

Active: Payment processing	
Payment status tracking	Tracking of payment execution state (pending, executed, rejected, etc.), with timestamps (*)
Store & forward processing	Delayed processing of orders in off-hours with bank information system business date validation
Payment cancellation	Payment cancellation available to customer, depending on execution state; by bank cut-off times
Payment operations sequence	Payment operation sequence execution (e.g. funds transfer, currency exchange and international payment)

ONLINE PAYMENTS

Bill payment	
Bill presentment	Presentation of information for payments due to public utility services
Bill information integration	Broad range of adapters to popular local (Bulgarian) utility providers
Bill payment	Execution of payments to public utility services
Bill payments - direct debit model	Standard automatic bill payment to utility services - direct debits management - consents, regular payments, cancellation
E-invoicing	Collection of invoices and receivables by vendors and payment by customers
Bill payment templates	Pre-defined templates for payments to public utility services
Cash collection	Option to provide same payment engine to Front office as channel for cash payments

Card payments	
E-commerce and Electronic payments via card processor	E-commerce site integrations, Merchant payments, Virtual POS integration
	Option for standalone E-commerce Ready Deployment with 3D Secure compliance

OTHER FINANCIAL SERVICES

Documentary services	
Letters of Credit	Create and edit L/C applications
Letters of Guarantee	Create and edit L/G applications

Securities	
Securities sales information	Sales information about securities traded by the Bank (ask/bid price, yield, etc.)
Securities portfolio view	View and management of the portfolio of securities
Securities trade	Requests for buy/sale deals. Treasury department integration-ready, with preferential prices and transaction tickets support. Request for buy/sale deals with funds of Asset Management companies

Pension, insurances and tax	
Insurance sales	Buy insurance products, re-apply for insurances and re-form insurance terms
Payments on insurances	Payment of installments on insurances
Pension fund payments	Payment of installments to pension funds
Tax payments	Payment to national state budget of personal or corporate taxes

PERSONAL FINANCE MANAGEMENT

PFM tools	
Income and expense tracker (with predefined and custom income and expense groups)	Present income (debit transactions) and expenses (credit transactions) for a period as absolute amount and relative ratio of each income and expense group
Budget setting and comparison to actual finances	Definition of target expenses and income and comparison of real income/expenses vs. planned budget
interactive visualization of customer position	Single view of customer position with visual tools (charts – diagrams, bar charts, pie charts; projected)

USERS CONCEPT AND CORPORATE FEATURES

Client object model and generic access control	
Online client	The registered entity - company or individual that is registered to use banking services through electronic channels.
Online user	Named user of the system - authorized person, assigned as a representative of the customer. All activities in the system from client's viewpoint are performed by the Online user. One Online client has one or more Online users
Access control	Channel login for Online user - possibility for different credentials and access methods for access on different channels. Credentials and certificates expiration check.
Session management	Control of the session of the Online user - session opening, detailed logging of activities on a session with timestamps, session logout - by expiration or forced.
Rights control	Validation all rights of Online user on products and services for respective Online client, check for assigned constraints (such as allowed / restricted operations on product, limits if any, etc).

Corporate banking	
Authorized signers concept	Authorized persons definition for corporate customers; Complex permissions and limitations on customer's accounts of authorized persons
Bank customer multi-client access	Access by one authorized person to accounts of different bank clients with different permissions. Applicable to groups of companies and holdings operating both as a single structure and as separate legal entities.
Payment execution rules	Payment execution rules – payment groups defined for each corporate user, with required number of signatures from specified payment groups for effective payment execution for amounts over a specified range. Flexible scheme allowing corporate users with number of authorized persons to apply an ordered payment system.

EXTENSIONS

ELECTRONIC STATEMENTS

e-statements	
Integration to document storage for printable statements	Presentation of official printable statements (on accounts, loans, cards) on Internet banking Statements mailing (optional signed with digital certificate)

ONLINE REQUEST PROCESSING WORKFLOW

Online requests	
Request register engine	Internal Workflow to support handling of online requests with configurable states;
Cash withdrawal / Cash deposit requests	Cash withdrawal / cash deposit request with representative appointment and authorization
Online registration	Online registration customers – individuals and corporate

B2B INTEGRATION

B2B features	
Volume data export/import	Export statements data in electronic format for automated processing of corporate bank customers, in standard (MT940, XML, other) or custom formats – for download via website; distribution via e-mail or other channels
XML Web Services	XML as a standard for data presentation; Exposing of eBank functionality as secured XML Web Services
Custom B2B services	Custom development of data exchange interfaces, if required by the Bank.

USER EXPERIENCE

Usability options	
User session info	Detailed user session information available to customer (login and logout timestamps and IP addresses, detailed activity log)
Free messages / Mailbox	Free messages from customer to bank and from bank to customer
Customer preferences	User interface look-and-feel; Home page setup, bookmarks, most used; Operational preferences - value date of payment orders, default accounts, etc.
Profile edition	Username and password change; Edit personal data (with option to sign changes electronically)

MOBILE BANKING

Mobile banking	
Mobile devices	Fully functional and <u>completely integrated</u> **Mobile banking apps** top Mobile OS supported – **iOS, Android**
Tablet applications	Optimized tablet application for top tablet OS – iOS, Android (opt. Windows)

OTHER MOBILE FEATURES

SMS, E-MAIL: SUBSCRIPTIONS, NOTIFICATIONS AND ALERTS

Subscriptions	Periodical sending of reports on distribution channels (daily, weekly, monthly, with periodical conditions and timeframe configuration – edition on web channel). Implementation depending on channel. Currency rates, account balance – SMS, e-mail Account transaction report – e-mail
Push Notifications / Alerts	Event-based report sending on distribution channels on event (BIS event or external event). Implementation depending on channel. Balance change – SMS, e-mail; Incoming transaction – SMS, e-mail Payment signed – SMS, e-mail; Login to online banking – SMS, e-mail Loan repayment amount; due date; overdue alert – SMS, e-mail Bank card repayment amount; due date; overdue alert - – SMS, e-mail
2-channel validation	Validation information (codes, transaction IDs, etc.) sent to distribution channel on security-based event. Implementation depending on channel.

SMS banking	SMS information requests and payments
Micro-payments	Secure m-commerce and m-payment applications

OTHER CHANNELS INTEGRATION

COMPUTER TELEPHONY

Voice, Call Center, Fax	
Call Center integration	Integration to Call Center and IVR platforms *(*depends on platform vendor – ready-to-run interfaces for Cisco IPCC supported; other available for development)*
Call Center active banking	Dual-mode user authentication (customer + agent) and enablement of payment operations for agents, with one-time passwords or other authorization mode
Faxing of reports	Account transaction report, Statements, General information
Active phone banking	Funds transfer /own accounts/, bill payments on phone bank (IVR) channel

ADMINISTRATIVE, BACK OFFICE AND INTEGRATION

ADMINISTRATIVE FEATURES

User management	
Standard user management	Default user options - default permissions and limitations for easy administration of individual customers.
	Subscribed accounts, personal rights on accounts : for active services + transfer limits (weekly, daily, one-time) for transactions; Access management: passwords expiration/ auto lock / forced password change
Extended user management	Additional advanced and corporate user options – management of authorized signers, payment groups/rules, extended permissions and limitations
User registration workflow	Internal workflow with Intranet interface for multi-step user registration and edition (with cost center operator options). Bank user administrator defined in roles such as "registrator", "editor", "supervisor", "security officer", etc, with different obligations in user management workflow
	Customized to bank requirements
Issue user credentials	Issue usernames and encrypted passwords from administrator - security officer; Option for PIN envelopes print, option for scratch-code cards assignment

Reporting and Statistics	
Usage stats	Full usage statistics: user access logs – detailed information on web sessions, time, duration, services used;
Application logs	Comprehensive application logs, with options for information, warning and critical messages and administrative alerts

Content management	
CMS application	Edit, publish, and manage static and dynamic Web content of e-banking site by Bank's e-banking service managers at a Content Management system
Custom controls	Possibility to embed custom (Bank or Third party developed) controls and applications into eBank.net platform
Resource edition	Resources (strings, images, etc.) edition options

CRM options	
Account manager access	Special enhanced access for account managers and help desk users to reports and analysis of customer activity
CRM DB integration	Integration to existing CRM databases with options for access to bank customer aggregated data and profiles

Billing	
Billing engine	Set charges and costs for using e-banking services by customers; Optional bank charges overriding

Warehouse and reporting	
Data extract	Development of packages to extract data to bank data warehouse
Sales reporting	Option to indicate the bank salesman while registering customer for sales reporting purposes

Business Intelligence and analytics	
Customer activity log analysis	Analysis of customer activity log to monitor trends of usage, preferred products, time-zones, patterns **Optimization of product offering; Cross-selling; Personalization**
Anti-fraud monitoring	Monitoring of behavior - suspicious sessions and transactions depending on predefined rules

INTEGRATION

As a key point in online banking implementation, the interface between eBank.net and core banking information systems is being designed, built and tuned specifically for every particular case. In addition, experience and already integrated stable interfaces have been implemented for high-performance online banking to a number of well-known core banking vendors.

Core-banking integration	
Core banking	Stable interoperability interfaces to core banking systems FIS Bankway International, Oracle (former i-flex solutions) FlexCube, Finastra (ex-Misys) Midas, Fiserv ICBS, Delta Informatique and a number of local vendors Custom interface between eBank and Bank Information Systems, designed and implemented specifically for every particular case
Bank host online and offline operations	Online and offline BIS interoperability mode with temporary storage of customer data and store-and-forward mode allowing non-stop e-services operation
Interop technology know-how	Already implemented connectors, EAI-trained staff and broad experience with SQL-based database sources; Messaging (MQ Series, MSMQ); Windows API functions; RPC; TCP/IP communication; HTTP (SSL); COM/COM+ components

Other systems integration	
Card systems	Connectors implemented on ISO8583 protocols and other proprietary protocols (ACI SPDH, etc.)
Other modules integration	Custom development of interfaces to Treasury, Back office, Retail, Accounting, CRM, Directory, Security systems for data exchange and interoperability, if necessary

OPEN BANKING

PSD2 compliant features	
Open APIs	Open APIs for access to accounts, payments based on formal PSD2 specifications and also additional APIs exceeding current PSD2 scope
Consent management	Smart consent management
Authentication and Authorization flows	Full coverage of redirect, decoupled and other flows for Strong Customer Authorization and authentication

DIGITAL ONBOARDING

Onboarding Process for companies and individuals	On-boarding Workflow engine
Person and company identification	- Integration to user (person) KYC service with ID check and video identification - Integration to company KYB service with checks to national company registries
Onboarding documents processing	- Generation - Storage in e-Archive - E-signing with qualified signing service

SECURITY

eBank.net general security framework is designed and built over industry standards for security, including identifying and applying practices for authorization, authentication, cryptography, session management, sensitive data management, infrastructure security, auditing and logging.

SECURITY HIGHLIGHTS

Standard categories	
Authentication	Unique user codes and passwords for eBank.net channels access; Password expiration and user disablement; User passwords stored one-way encrypted
Authorization	User credentials and privileges validation on every resource and application block; Personal permissions on banking services
Cryptography	PKI and digital certificates as a standard for user authentication, integrity of data interchange, confidentiality and preventing repudiation issues

	eBank.net supports PKI-based security, implemented through usage of personal digital certificates for authentication and enhanced security on selected customer services (payment orders, funds transfers and other operations), with all sensitive data signed with user's digital signature. User certificates are stored on a secure device (token or smart card). eBank.net PKI implementation is compliant to currently effective Electronic Document and Electronic Signature Law and supports QES (Qualified Electronic Signature) by certified national vendors.
Session management	Unique session identifiers and secured session details storage; Session lifetime control on every discrete user action
Sensitive data management	Sensitive data stored, sent over network and logged in encrypted form
Infrastructure security	Secured network infrastructure provided by the Bank; Encrypted traffic between application tiers; SSL where applicable; Securing eBank.net servers
Auditing and logging	Full log of user activity; Audit of application activity through all application tiers

CUSTOMER SECURITY OPTIONS

OTC and OTS devices	OTC - One Time Codes, and OTS - One Time Signatures with cryptographic devices – complete integration with VASCO data security solutions
Bank account management integration	Integration to existing central Bank user account management systems providing credentials and sign-in services to customers (Single sign-on)

SINGLE DIGITAL ID SUPPORT

OAuth2 and OIDC compliance	Identity server component with certified support for OAuth2 and OIDC for omni-channel single Digital ID (Optional FIDO2)

STRONG CUSTOMER AUTHENTICATION AND AUTHORIZATION

Multi-factor solution	Support for hardware and mobile tokens, TOTP, mobile TANs and other

ANTI-FRAUD SOLUTIONS

Integration to anti-fraud solutions	Monitoring of "suspicious" transactions by configurable criteria in anti-fraud platforms