# Sunbay

# COMPANY BRIEF

## YOUR GUIDE TO:

### ON DEMAND SOFTWARE DEVELOPMENT

### MAINTENANCE AND RE-ENGINEERING

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# A Practical Guide To Outsourcing Software Development, Maintenance and Re-Engineering

# Introduction

As business grows and needs change, corporate IT departments tasked with automating processes must choose between using an Out of the Box solution with or without modification or developing custom software. To realize this goal and prepare for ongoing maintenance and upgrades, the company can employ an in-house IT staff or outsource the project to a staff of specialized engineers.

Outsourcing can provide a substantial return on investment if a variety of risk factors are addressed while researching and comparing the best vendor(s) for the job.

## About the Author

Michael Arzhannikov is an international corporate IT Innovator who has worked with startups, million-euro corporations and business of every size in between. In 2014 he reorganized Sunbay B.V. as the European sales office for the BizApps global network. BizApps has 15 years of software engineering excellence serving customers around the globe.

## Choosing Between Custom and Modified Software

Many organizations are faced with the need to employ custom software. Often their journey begins with the purchase of an out of the box product that enables extensions to perform additional functions. In software development parlance such ability is called an API – Applications Programmatic Interface. Once a need to automate a new business process emerges, the company seeks a way to produce an extension interfacing with the core product through an API. That task sometimes can be addressed by purchasing a third party out of the box module if extensions to a certain product are available. The best example is Salesforce.com and a variety of add-ons offered by its partners for every conceivable purpose. If no suitable extension can be purchased, the organization faces the need to produce one to meet its specific needs.

The scenario isn't usually that challenging, but staffing the task can be. The task itself is usually relatively small, so outsourcing the labor is both cost-efficient and safe when compared the challenges of funding, recruiting, training and retaining an in-house software development team.

## Protecting Intellectual Property

If a business has unique processes that constitute their competitive advantage, there probably isn't a product on the market that automates it. Since the process itself is an advantage, it is likely a trade secret that has to be guarded. Competitive business processes naturally evolve as the business environment changes, the company must make airtight change management a top priority.

So how do IT directors automate closely guarded processes? While it is possible to purchase a framework to be used as the foundation for producing an automation tool, devising a process flow within this framework becomes a software development job in itself. Even when the framework offers visual programming, it does not eliminate the need to capture functional requirements, perform quality assurance, acceptance testing, implementation and post-implementation support. That means someone in the enterprise has to become a software developer, or one has to be hired. However, it is rare to find a developer equally well endowed with all of the above skills while also having a customer oriented personality to walk executives through training, usage and troubleshooting. These different activities require different aptitudes and skill sets.

It is by far more efficient to outsource a team with complementary strengths than hire one person who has them all. Building a team takes time, and there is often not enough work for the whole team at one organization. This is when software development outsourcing demonstrates its advantages – a customer can order a slice of pie in the perfect size and flavor, at an affordable price, without compromising quality. Whereas an in-house team requires an upfront investment of time and money on talent acquisition and retention, a top-tier outsourced team can be available on relatively short notice.

Keeping trade secrets private is possible while outsourcing automation of processes built upon these secrets. An NDA defines what information cannot be divulged to other parties, and partnering only with an organization one trusts to adhere to contracts goes without saying.

When a third party develops software for a company, who owns the copyright for the code produced? Vast majority of software development outsourcing companies keep that copyright to themselves, so a dissatisfied customer cannot take the code away to engage another team. In case an outsourcing entity is acquired by another organization, there is potential for disputes or the disclosure of trade secrets through the reverse-engineering of software. Imagine the competitor of the company for which the software was developed acquires the outsourcing contractor. It's rare, but when it happens, the results can be devastating. Sunbay resolves this issue by assigning copyright for the code we develop to the customer. That's one of our big competitive advantages, one we don't keep a secret because few, if any, companies in our line of work will follow our lead.  We do this to ensure customer satisfaction; by removing artificial restrictions our customers are free to use and modify the products they pay for however they please.

## Managing Change

Change management is another area where an outsourced team really shines. Unlike 9-to-5 employees, an outsourced offshore team can be structured to work 24/7. Requirements collected during European business hours can be implemented overnight, during business hours of the country hosting the team or adapting the working hours to the customers need. Acceptance testing is performed with the customer during the next business day, and the next iteration of changes takes place overnight. Production deployment can be done remotely outside of European business hours, with a support team being available the day following deployment, at our customer's business hours, to address any unforeseen issues. Strict procedure governing interaction between the parties ensures no changes are introduced that bypass the review and testing phase, even if there is a pressing deadline.

## Talent Recruitment, Training and Retention

Finally, talent retention is worth special attention. Talent retention affects a company's ability to keep software running effectively around the clock. If a company has one person or a small department managing IT, and a core person quits, two week notice usually provides little time to manage a seamless transition.

Software developers have to keep their skills current to stay relevant to the market and feel secure. However, corporate environment is not conducive to that, as an in-house team typically works on the same system, using the same technologies, day after day. When some corporate software engineers become bored and restless, they seek new challenges and finally leave. Members of an outsourced team, working for a variety of customers, enjoy diversity of problems and have fewer, if any, reasons to seek other employment for professional development.

## Getting Started

Each organization's environment is unique, so there is no single recipe that will satisfy all. However, there is a strong case for outsourced software development. So where does a company begin to look for a trusted and reputable outsourcing partner? IT professionals tend to be well networked, so first-tier referrals are always a great place to start. Blind Google searches can be frustrating; not only to find quality partners, but to find partners with the project management expertise, fluency in English, and the ability to scale staffing to meet the needs of any size project.

The BizApps global network is highly credentialed with more than 15 years of experience working for some of the world's top corporations. Sunbay was created to help companies in Europe to tap into this deep pool of software engineering talent. We can fully manage the project from our offices in Seattle, employing teams as needed in Moscow, Kazan and Krasnodar. In the case study that follows, you will find our credentials in the area of Software Development, Maintenance and Re-Engineering.

Please do not hesitate to reach out to Sunbay for a conversation to see if outsourced software development, maintenance or re-engineering is the right choice for you.

# Case Study

## Software Development, Maintenance and Re-Engineering under the Sunbay business model

### Software Development, Project Management and Support

Sunbay is staffed and structured to perform every service within the Software Development Life Cycle (SDLC) or assist client teams during individual stages. Our engineers are experienced with both traditional (waterfall), generic (V-model) and iterative (Agile, Scrum etc.) software development processes.

### Software Development Services

Our projects are often in, but not limited to, business enterprise-level applications (B2B, B2C, E-commerce), web-based solutions of different levels of complexity; reporting, analytical tools and applications to support sales and/or the decision-making process; ERP systems, databases, and information systems; applications for mobile devices; integration, migration issues, improvements, upgrades, support and administration of existing IT solutions; and consulting and optimization of business processes; requirements specification and setting goals. If we can utilize a proven platform we will, otherwise we will build a custom application from the ground up.

We provide thorough communication throughout the development lifecycle. Open feedback is critical to the success of our products, the strength of our client relationships and the continued growth of our company. Before the finished product is provided to key users, each new line of code is reviewed by senior developers and all functionalities are regression tested using different types of testing tools and methods. Our technical writers ensure the product launches successfully by creating logical, easy to follow, and intuitive user manuals, FAQs and troubleshooting guides.

### Software Maintenance

Sunbay offers a variety of affordable solutions to keep your software updated to meet current business requirements. We design add-ons and updates to modern and legacy systems, whether developed by us or other parties.

A cold truth of life in the modern age is as follows: today's most cutting edge technology will be out of date tomorrow. Sadly, this statement is no longer an exaggeration. Out of the box software businesses install today is already out of date. Changes both good (innovations, upgrades, plug-ins and apps) and bad (new malware and hacking threats) are introduced minute by minute around the world. The secret to success is responding rapidly to this changing environment and evolving business applications to keep them relevant.

Sunbay manages routine software maintenance remotely so that the software that runs the company grows alongside the company itself.

## Software Re-Engineering

If software maintenance issues escalate in terms of severity or frequency, or if work processes require new tasks that the existing system just can't deliver, software re-engineering is often a cost effective alternative to developing a new system.

As legacy systems age and the market gravitates to new platforms, customer support and upgrades to help companies repair and patch their systems tend to dwindle and disappear. In other circumstances, only one section of a system is in need of upgrade while the rest operates just fine. This is where software re-engineering should be considered.

Software re-engineering can be accomplished in many ways. Most often, the existing code is examined and altered to improve reliability and meet revised goals. Depending on the platform, the source code can be translated or reverse engineered to set in motion modifications that will reach the desired result. Because most of the legacy system remains in place, this process comes with reduced risk of data loss or workflow disruption.

If the section of the platform being re-engineered shares a data source with other sections, safeguards will be put in place to allow the re-engineering but protect the original data. If the data is the source of the problem and needs an upgrade, a deeper set of Data Re-engineering processes are implemented. Data Re-Engineering helps remove data that is doubled, obsolete or no longer relevant while setting new parameters into place that were not considered or even imagined when the original database was created.

Re-engineered systems deliver all the features a company's customers and employees rely upon as well as new services and functions to reduce employee stress, increase productivity and boost customer satisfaction.

# Customer Success Stories

The following are examples of work done for current customers by Sunbay's parent company, BizApps, grouped by industry. To protect client privacy, Sunbay corporate policy is to cloak company names and other identifying features from promotional materials.

## Independent Software Vendors

**Client:** One of the leading global ISVs in service provider automation and virtualization solutions

Our client was experiencing severe productivity losses regarding internal communication and document sharing; their internal IT department was overloaded, so we stepped in with several solutions.

We managed software maintenance and re-engineered the company's intranet sites. During our first month of work, the number of negative incidents related to intranet was reduced nearly 30%. Version control, user acceptance testing and incident management procedures were introduced shortening incident resolution times from more than two weeks to 2-3 business days.

## Client:     A global leader in antivirus and endpoint protection software

We expanded the productivity of the company's in-house engineering team whenever their workflow capacity was exceeded. In an industry where new security threats arise around the clock, every day of the year, we helped the company maintain its sterling reputation for innovation and excellence.

For this project, Sunbay:

- White-labeled plug-in sets to provide protection for Internet services (IMs, P2P, FTP)
- Developed service desk portal for processing service requests based on MS SharePoint
- Created an integrated development environment for virus analysts, delivering all source information for antivirus development
- Engineered Internet crawler for multithreaded Web sites scanning, locating and downloading binary files for further analysis for viruses
- White-labeled Antivirus and Anti-spam for mail servers
- White-labeled Update Utility for customer's antivirus software in corporate environment

## Client:     Developer of an all-in-one data traffic optimization and security client-server software

In the modern workplace, employees work seamlessly in the office, at home, on the road and in the air. We created systems to help ensure constant communication and productivity on a wide variety of platforms.

For our client, we produce VPN solution for secure and stable communication between remote employees and the office regardless of their location and available communication channels.

### Features and functionalities:

- Cross-platform solution (Windows, * nix, Symbian, MAC)
- Automatic switching between various wired and wireless communication channels according to user settings
- "Smart" data compression and caching to reduce the amount of data and the cost of transmission
- User authentication and data encryption to ensure secure transmission

### Technical solutions

- Roaming solution for seamless switching between different kind of networks. Automatically keeps connected to optimal network to avoid termination of current sessions.
- Traffic compression.
- Secure communications.
- Client for all major platforms - Windows, Mac OS X, Linux, Android, iOS.
- Server side configuration of client's settings.
- Extensive reporting on traffic optimization for capacity and service level management needs.
- Client less solution to compress and optimize traffic to match capabilities of specific devices.

### Scale

- Capable to serve up to 10,000 clients per server node.
- 40-70% traffic compression rate.

Labor
- 10 years of continuous development and support of production systems all over the world.
- Dedicated core team of 10 software developers, expanding when needed.

# Retail and Distribution

Client:     One of the world's top direct marketing companies, based in the US

We helped our client dramatically increase sales and sales force productivity, as well as sustain double-digit growth for years without proportional growth in costs, by designing an E-commerce system to better manage sales, inventory, communications and analysis.

Features and functionalities:
- E-Commerce application for the automation of full sales cycle, including:
  - Placing orders
  - Setting and monitoring of accounts
  - Payment processing system
  - Warehouse management
  - Work with clients and consultants of the company
  - Generating reports
- Technical support and maintenance of corporate legacy systems in more than 30 countries
- Design and technical support of corporate website

# Consulting

Client:     The leading US provider of enterprise software and information solutions for government contractors and companies with professional services

When our clients need to add new products and don't have the staff to do so, we bring projects in on time and on budget.

Project Management Performance Portal

We designed an application to deliver project performance measurement to help our clients evaluate risks and their impact on the implementation of the project and identify "narrow" mission-critical jobs and cost parameters. This application was based on MS SharePoint and SAP Enterprise Portal

Assessment +

We designed a Web application to evaluate the effectiveness of project management and monitor the status and effectiveness of various programs operated by the company.

**Client:    Japanese consulting company**

In order to remain competitive, our client needed new ways to evaluate performance, share documents and make communications more efficient. We delivered:

- Call Center Dashboard – Web application for evaluating the performance of call centers, data collection, data processing and calculation of analytical indicators
- Intellicoder – WAP-portal to ensure common content for primary mobile operators in Japan
- iPad CRM Client – Client application for CRM on the company's server with the ability to view and edit

# Banking and Financial Services

**Client:    One of Russia's leading financial institutions**

Our client needed to automate business processes on their legacy system without interrupting workflow during the transition.

**Features and functionalities:**

- Workflow automation and configuration of event models based on MS SharePoint Portal Server

**Client:    Russian Commercial Bank**

Our client needed a variety of new applications to help streamline their workflow efficiency.

**Features and functionalities:**

- Client Proximity Application – Android based mobile application for bank managers to monitor clients who are nearby the bank.
- Minutes of Client Meetings - MS SharePoint based web-portal to manage notes and agreements and assignments from VIP client meetings
- Media Plans Coordination – We designed a separate corporate portal based on MS SharePoint that is capable to integrate with the LOTUS environment

**Client:    Russia's Leading Online Stock Trading Company**

To improve employee productivity and increase document security, we created desktop applications for employees and re-engineered data storage systems.

**Features and functionalities:**

- Business processes automation, tuning, support and development. Integration with CRM system, internet portal, ORM systems

**Client:    Retail bank, Ghana**

We developed web-based Internet banking application for the bank's retail customers.

**Client:** A leading wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer, Switzerland.

Retrieval and transformation (ETL) of financial and insurance data from legacy systems into XML data files with visual web access for users and API for external systems.

**Technical solutions**

- Develop custom XML schema for legacy data structures.
- Data structures analysis and reengineering.
- Transform normalized data structures to hierarchical view
- Development of web services to feed data to external systems.

**Scale**

- More than 10 million records to analyze and transform.
- 45 external applications retrieving data through web services.

**Labor**

- 3,500 hours of analysis and development.

**Client:** The third largest banking group in Switzerland and a leader in retail banking business

We created a control system to manage deposits for one of the largest banks in Switzerland. This software allows clients to transfer pension savings deposits into securities.

**Features and functionalities:**

- Compatible with external systems to provide and manage financial transactions
- Generates various quarterly and annual reports for clients and management
- Works with a large amount of data (about 4 million records)

**Technical solutions**

- Implement collection of orders of bank end customers to invest pension savings into securities.
- Aggregation of customer requests into group of collective orders with further submitting such collective buy or sell orders to external investment bank.
- Reflect results of purchase or sell securities on deposit status and history
- Communicate corresponding financial transactions to internal bank accounting system.
- Reach legally required and managerial reporting of various weekly, monthly, quarterly and yearly statistics. All reports are done in English, German, French and Italian languages.

**Scale**

- Around 100 internal active users of pension department.
- Processing of 1,500-2,000 individual orders every week.
- Around 300,000 active deposits and constantly growing.
- Over 4 million records of various data like personal data, deposits history, orders.

- 42 complex reports.

## Labor
- Around 15,000 man hours of initial development.
- 10 years of technical support of production system.
- Continuous system development and improvements, 5,000 – 6,000 man hours per year.

## Client:      One of Europe's leading comprehensive life insurance, pensions and financial solutions providers

We created an accounts management system to help our client remain competitive, operate efficiently and provide world-class service.

## Features and functionalities:
- Monitor existing financial flows of insurance and insurance contracts
- Inform management about the status of the insurance accounts and the status of the holders of the insurance accounts at any time
- Perform various reports in English, German, Italian, French
- Manage correspondence with clients or their authorized representatives by telephone, fax, e-mail
- Manage assets and liability of all insurance and financial accounts and of all money flows related to those in the pension insurance fund.

## Technical solutions
- Implementation of current financial flows monitoring for insurance and insurance contracts.
- Management of all assets and liabilities and money transfers for account holders related to BVG Umbrella Fund.
- Internal bookkeeping of pension accounts as well as integration with central banking bookkeeping based on SAP.
- Interfaces to communicate with Swiss government, banks, account holders.
- Produce various reports in English, German, Italian and French.
- Tools to communicate with customers or their authorized representatives by phone, fax and e-mail.
- Asset and liability management of all insurance and financial accounts and of all money flows related to those in the pension insurance fund.
- Data warehouse. Archiving of all existed data related to account holders using additional interfaces for the archival system to store, recover and search all data using an alternative media storage.
- Automated payment entry of incoming payments received through the Post finance system.

## Scale
- Around 1 million of open accounts.
- Managing assets valued at over 4 billion Swiss francs.
- 50 internal users.
- 62 financial reports.

## Labor
- Around 15,000 man hours of initial development.

- 8 years of technical support of production system.
- Dedicated team of 4 engineers to maintain, support and further develop the system.

**Client:** Financial group comprised of units providing alternative investment, corporate finance, and wealth management services in Switzerland

We developed a custom E-commerce system to help our clients better serve their customers.

**Features and functionalities:**
- Proposals on the purchase (bid) and/or selling (ask) securities located on the OpenOTC server
- Each proposal has a number of priority parameters (including, but not always, price)
- The system compares the currently available offers by all adjusted criteria.
- If the recorded response proposal meets the requirements, both parties are invited to sign an agreement for the purchase and sale of the appropriate package of securities.

# Advertising

**Client:** One of the largest advertising agencies in Japan

Having a great idea is one thing; effectively presenting a good idea is everything, especially in the world of advertising. We created a variety of multimedia products to help our clients effectively present proposals, campaigns and other marketing materials to their clients and related audiences.

**Features and functionalities:**
- Creator / Viewer – Desktop application for viewing of the multimedia material presentation;
- Lappla – Application for viewing marketing material provided in internal company format.

**Client:** Analytical Center researching advertising markets in Russia and around the world

In the advertising business, media buying platforms mix multimedia, search capabilities, databases and presentation documents.  We helped our client to develop proprietary tools to give them a competitive advantage.

**Features and functionalities:**
- Media buying system – automated system of advertising – the creation of functional blocks, which allow to view videos, measure the area and timing
- Creation and support of customer's website – the new website works as a library of publications with catalog and search features

**Client:** Agency of a major convention center in Moscow, Russia

We created a multimedia presentation disk to incorporate videos, panoramic images and narration in several languages.

# Professional Services

## Client:     Express delivery service company, Russia

We managed development, integration and support of an ERP system based on the 1C-Enterprise platform. Deliverables included:

- Refactoring and performance tuning
- Reports
- Intersystem data exchange

## Client:     Payment processor

We built an instant payments system.

### Features and functionalities:

- System intended to receive instant payments through Kiosks, POS terminals, j2me portable devices, PC client. The solution is designed to support high transaction volume and does not depend on a specific set of POS equipment services.
- Multi-platform solution for Windows and *nix.
- Calculation and assessment of payment accounts, fees and commissions for the different agents.
- Compilation of all the necessary information for accounting reports.
- Adding and removal of payees without interruption to system operation.
- Easy scalability.
- Advanced fault tolerance.

## Client:     Software solution provider for pharmacy industry

We developed a web-based rich UI frontend to distributed document repositories based on EMC Documentum and IBM FileNet.

### Features and functionalities:

- Simple web based frontend for end users.
- Keeps track of variety of content storage backends over universal adapters.
- Possibility of synchronized operation across multiple document management systems
- User-friendly interface

### Technical solutions

- Development of unified internal API for major document management systems
- Internet Explorer based reach UI for end users that do not require DMS specific knowledge from end user.
- Intermediate business flow of documents processing transparently mapped on specific document storage

**Scale**
- Serving pharmacy companies up to 2,000 employees active in the system.
- Acting as front end to document management systems storing more than 2 million documents totally.

**Labor**
- 3,800 hours of analysis and software development.

**Client:    Family-owned startup, seeking to establish communications between European physicians and hospitals.**

Physicians' social network connecting medical practitioners to hospitals, exchange patients' data and experience between practitioners.

**Technical solutions:**
- Dashboard, personal messaging.
- Global medical practitioners and clinics directory.
- Support of medical diagnostic specific formats to exchange patients' data like X-ray, CAT etc.
- Education network.

**Scale**
- Capable to handle more than 10,000 registered medical practitioners and clinics.
- Stress tested under 5,000 requests per hour.

**Labor**
- 5,100 hours of analysis, design, software development and integration.

# Manufacturing

**Client:    Women's clothing producer, Russia**

We managed development, integration and support of an ERP system based on the 1C-Enterprise platform.

**Tasks:**
- Architecture design
- Data migration
- Automation of factory documents creation for accounting.

**Client:    A German-based supplier of products, solutions and services for industrial process measurement and automation**

We re-engineered the selection system for industrial control devices produced by the client. The product was delivered to our client's customers as an on-line service and on CDs.

## Technical solutions

- Standalone solution delivered as on-line service as well as on CD to key customers.
- Wizard to assist with selection of the most suitable measuring technology or product for customer's industry.
- Compare measuring principles, instruments and components and calculate precisely the sizing of the measuring point using complicated physical formulas.
- Implementation of Flow meter, Energy, Diaphragm Seal, Thermowell and Gamma calculations
- Assistant to configure an instrument to customer's environment so an order could be placed.
- Verify and store product details, configuration, certificates and documentation.
- Manage engineering projects right from the start and store the relevant parameters and documents for reuse.

## Scale

- Database of 580 measurement instruments produced by the company.
- Several hundred parameters stored and monitored for each instrument.
- Around 100 complicated physical formulas to calculate dependencies of the parameters.

## Labor

- Around 12,000 man hours of initial development.
- 5 years of technical support of production system.
- Dedicated team of 5 engineers to support and develop the system.

# Sharing Economy

### Client:      Car sharing startup in Moscow, Russia

Ride sharing has disrupted the taxi and limo industry around the world. Many companies enter the market, but the few that survive gain market share rapidly with easy to use consumer technology. We helped our client from the very beginning, with system concepts to support their business model. Once funded, we developed the site's architectural design, UI, data storage, mobile and web client apps, CRM, accounting and online payment.

# Government Agencies

### Client:      National executive body providing public services related to real estate property rights in Russia

Our client hired us to create a new surveyors' professional certification system using an existing database.

## Projects:

- System of surveyors' certification – automated system for managing professional competency assessment and certification of surveyors.
- Inventory engineers register system – support and development of an automated register of inventory engineers.

Technical solutions
- Automation of entire process for professional certification of surveyors - registration, tests attendance, video monitoring of testing, compliance of test results with all legal protocols and submission for further approval and registration.
- Maintaining the register of surveyors. Store history of professional activities, changes of personal data, status and so on. Responding to inquiries from citizens received over internet portal.
- Eliminated the need for paper documents by the use of Digital Signatures issued by certified government bodies throughout the system.

Scale
- 37,000 and constantly growing number of surveyors.
- More than 2 million records covering surveyors' records on employment, professional activity, and personal data.
- More than 100 internal registration department users actively working with the system.
- 5,000 – 10,000 requests of internet users per day to public portal with extended search and reporting functionality.

Labor
- Around 5,000 man hours of initial phase analysis and development
- 6 years of technical support of production system.
- More than 15,000 hours of analysis and development of new functionality.

# Institutional Investors

Client:      One of the largest private institutional investors, Russia

Our client needed an updated and expandable asset management system to meet the needs of a wide variety of stakeholders, each with varying levels of technical skill.

We designed a system to optimize the work of the experts, heads of departments, senior management and shareholders of the corporation who need to keep a record of the existing assets of the corporation, receive analytical reports on the status of assets, track decisions concerning corporate governance bodies, or keep records of primary documents related to the issues above. This product was based on EMC Documentum software.

Technical solutions:
- Adapt corporate property-related documents to centralized EMC Documentum based storage.
- Reflect complex managerial structure in access rights based on documents' content.
- Fully customized look and feel of EMC Documentum front end in accordance with corporate identity of the customer.
- Extended reporting including Visio diagrams of hierarchical property structure of one of largest financial corporation of Russia.

**Scale:**

- Over 60,000 companies owned by financial institution.
- Over 2 million of properties all over Russia hierarchically connected to each other and to businesses.
- More than 200 simultaneous internal corporate users.
- More than 4 million documents, scanned, indexed and managed in accordance with corporate standards.

# Telecommunications

## Client: One of the leading telecommunications providers in Russia and former Soviet Union

Our client needed an electronic document management system for storing, managing and sharing corporate financial and accounting documents.

**Features and functionalities:**

- Automation and unification of documents between more than 90 regional branches and head office.
- Processing of text and graphic documents.
- Metadata unification, processing, storage and search of metadata.
- This product was based on the EMC Documentum software.

**Technical solutions**

- Receive and store in central repository accounting electronic as well as scanned paper documents from regional bookkeeping departments.
- Provide access to the documents to authorized company employees.
- Custom attributes and workflow for all kind of accounting documents.
- Extended access control for employees.

**Scale**

- Over 80 bookkeeping offices
- Up to 100,000 documents submitted daily.
- Around 200 internal users

**Labor**

- 4,200 hours of analysis, platform customization, software development and integration.

## Client: Russia and former Soviet Union, intranet portal for one of the leading telecommunications providers

IBM WebSphere-based intranet portal for employees of all levels. Developed corporate library and open positions/applications management services.

**Technical solutions:**

- Standalone portlets in accordance with JSR 168 portlet specifications were developed.
- Integration of the portlets into corporate portal infrastructure.
- Public interface for company job board, applicant tracking system.

**Scale:**

- Around 500,000 books and magazines registered and managed in the library
- 1,000 – 2,000 candidates monthly applying over applicant tracking system.
- More than 20,000 employees having access to the portal.

**Labor**

- 4,900 hours of analysis, platform configuration, development and integration.

## Client: One more leading telecommunications carrier in Russia and Ukraine

We designed a system of management and analysis of telephone numbering plan for landline and VoIP subscribers.

**Features and functionality:**

- Collects actual routing, collisions and status information from telephone switching hardware.
- Enables engineers to analyze state of switches, routing configurations, collisions and so on.
- Generates technical reports as result of analysis.

**Scale:**

- 25 telephone switches of different size
- 150 numbering plans
- 500,000 landline phone numbers
- 50 engineers actively working with system

**Labor**

- 4,500 hours of initial analysis and development
- More than 10,000 hours of further technical support and development

## Client: Leading telecommunications carrier tool to track of carrier hardware failures and management of related incidents

We produced a tool to track of carrier hardware failures and management of related incidents throughout their lifecycle, from opening to resolution.

**Technical solutions**

- Identify hardware failures over SNMP and other hardware monitoring protocols from components as well as upon manual input.

- Tracking hierarchical dependencies of hardware components and automatically identify branches of network as temporarily unavailable due to root level incident.
- Complete incident management process automation involving technical and administrative carrier staff, until complete incident resolution.
- Various statistic reports on troubles registered as well as flow of their resolution.
- Serves both landlines and VoIP circuits.

### Scale

- Around 500,000 end users being notified on technical failure.
- 300-500 incidents a week registered and resolved.
- 45 statistic reports.
- 100 internal users of the carrier.

### Labor

- 3,200 hours of initial analysis and development.
- Dedicated team of 2 engineers to support and develop the system for 3 years.

**Client:**    Startup planning to market a product and service catalogue management system for large carriers.

Product and service catalogue management system designed to support service providers' business.

### Technical solutions:

- Workflow management to control products and services lifecycle.
- Rich user interface to manage products and service catalogues.
- Interfaces to external systems to feed service status information and change management related updates.

### Labor:

- 2,500 hours of interviewing subject matter experts, subsequent analysis and development of system specification.
- 25,000 hours of product development in 5 iterative phases.

# Internet economy

**Client:**    Netherlands mobile media content distribution company, delivering content to consumers over SMS and Internet, with representative offices in 8 major countries.

Mobile content storage, management and distribution system. Content is managed by client's staff and delivered over SMS and Internet portals to consumers.

### Technical solutions:

- Integration with SMS gateways.
- Complex data structures to group and categorize content for management and selective delivery.
- Dynamically convert content to quality and format specific to the consumer's device.

- Processing with pictures, sounds and mobile games as content.
- Financial and analytical reporting on content purchase history and trends.

**Scale:**

- More than 10 million content items.
- 5-20 content requests per second.
- 120 internal users managing content and operating the system.
- 24/7 availability serving consumers around the globe.

**Labor:**

- Around 20,000 hours of initial development over 4 iterations.
- Team of 4 dedicated engineers to support the system.
- More than 40,000 hours of further system development during 4 years.

**Client:** Provider of tools to distribute and monetize audiovisual media content through its own consumer portals and via software utilized by public media companies.

The platform based on EMC Documentum stores and structures media content and content specific attributes. The content with embedded ads is retrieved by various front end applications.

**Technical solutions:**

- EMC Documentum is utilized to store and manage audio and video content.
- Content is modified by advertisements on the fly in accordance with system settings.
- API to external front end systems, like web sites or mobile apps.
- Extensive usage of clustering and distributed computing.

**Scale:**

- Capable to handle up to 500 requests of per second.
- 10 public internet services - radio, HD video gallery, TV channels - utilizing the platform as back end.
- Handling more than 2 million of content items.

**Labor:**

- 5,000 hours for initial customization of EMC Documentum and development of custom API for content customization and retrieval.
- 2 years of technical support once platform went live.
- 2,000 hours to improve and implement the system.

## Transportation

**Client:    Railroad maintenance authority**

We designed a system to collect diagnostic data upload from trains and other rolling stock over Wi-Fi connection while stopped at a rail station. Uploaded data is validated and stored for further interpretation by a specialist and determination of causes of defects in the railway.

**Technical solutions:**
- Secure interface to accept diagnostic data from every railcar of a stopped train.
- XML data validation.
- Data integrity verification and initiating response to alarming diagnostic data.

**Scale:**
- Accepts 2,000 – 3,000 uploads per hour.
- 500 internal users analyzing alarming diagnostic data.

**Labor:**
- 4,000 hours of analysis, design, software development and integration.

# Technology list

### Software development

We can perform every service within the Software Development Life Cycle (SDLC) whether we operate the full cycle, or assist you during individual stages. Our team is experienced with both traditional (waterfall) and iterative (Agile, Scrum etc.) software development processes.

Our process typically consists of these phases:
1. Project discussion and goal setting
2. Information gathering and analysis
3. Design
4. Implementation or coding
5. Testing
6. Deployment
7. Maintenance

We are comfortable filling any of these roles entirely, or in close cooperation with our customer's team. Our customer's team will be staffed with highly trained specialists in the areas of design, architecture, development, debugging, functional and load testing, documenting and ongoing operational monitoring and maintenance. We serve our customers as an independent contractor and can assign all intellectual property rights to the customer upon request.

## Software maintenance.

Sunbay, part of the BizApps global network, is experienced in maintenance and operational monitoring of both newly developed and legacy systems. Our first and second levels of monitoring and support organization are staffed with engineers with a detailed knowledge of the system, rather than customer service specialists focused on communication. These engineers are capable of communicating both with customer's technical staff and end-users. Sunbay maintenance service can be provided 24/7, depending on specific customer needs. Functional unit and load testing can be included into scope of this service, as well as small software updates and the customization of out-of-the-box products.

## Software re-engineering and refactoring.

Source code re-engineering and refactoring, and overall architecture optimization and redesign are two other core competencies of Sunbay. We are experienced with porting legacy systems to current technology. Sunbay offers unit and performance evaluation services to rapidly identify performance deficiencies in your code, to be remedied either by Sunbay developers or our customer's internal team.

| Platforms | Tools & Technologies | Reporting | Methodologies |
|---|---|---|---|
| Microsoft Windows, Unix, Oracle (Sun) Solaris | C#, C/C++, Java, Python, VB/VB.NET | Microsoft SQL Server Reporting Services | UML, IDEF0-14 |
| Microsoft IIS, Apache, Apache Ant (Tomcat) | ASP/ASP.NET, JSP, Servlets, ISAPI, Ruby on Rails | SAP (Crystal Decisions, Business Objects) Crystal Reports | XP |
| Oracle (BEA) WebLogic, IBM WebSphere, WildFly (JBoss) | WAP, WML, HTML5, J2ME | SAP BI | Axure |
| Microsoft BizTalk Server, webMethods Integration Server, Microsoft Project Server | ABAP/4 Workbench Tools, ABAP/4 | Status Report (Microsoft Project Server) | Agile, Scrum, Scrum-ban |
| Microsoft SharePoint Server, SAP Enterprise Portal, Vignette Portal | HTML5, VBS, PHP, CSS | Microsoft Office, Open Office connectors for Oracle BI, SAP BI, Essbase | Waterfall |
| Oracle Server, Microsoft SQL Server, MySQL, Sybase ACE, MongoDB | Macromedia Flash, Macromedia Director | | ASAP |