

## Alexey Omelchenko

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### SOFTWARE DEVELOPMENT MANAGER

#### OBJECTIVE

To get a challenging position of software development manager which will utilize my skills and knowledge.

#### SUMMARY

- A software development manager with total 16 years of experience.
- Expertise in Enterprise Software Systems planning, development and support.
- Positive close working with the Business in banking, investment and financial services.
- Processes management on every stage of software Systems/Product Life Cycle.
- Deep understanding and employment of the fundamental principles of Agile development.
- Distributed Teams Management.
- Budget Planning and Risk Management.
- Software development and technical leadership on complex projects.
- 8+ years of experience in software systems development for major international financial institutions (USA and Europe).
- Following modern technologies, platforms and solutions including Open Source projects.
- Excellent decision making and problem solving skills.
- Excellent communication and interpersonal skills, leadership and teamwork.

#### SKILLS

Process management skills:

Development process: Agile, Iterative methodologies, Scrum, TDD, FDD, PSP, TSP, XP;

Business processes in IT;

Business relationship, Resource management, Issue management;

Technical ownership of complex business-critical systems which involved hundreds processes and services, multiple databases etc.;

Responsibility for Investment Banking Systems, Online Banking, CRM, Request Tracking System, etc.;

Quality management through Functional Testing, Load Testing, Monitoring, Maintenance, User Support etc.

People management skills:

Leadership, effective communication and interaction, knowledge management;

Conflict management, Motivation;

Annual employees assessment and promotion.

Technical skills:

Deep understanding of principles necessary to create robust, secure, scalable software systems;

Programming languages: C++, C#, .Net, Java, Objective-C, SQL, Python, Perl, Assembler;

Architecture & platforms: Linux, Solaris, Windows, UML, Design Patterns;

Web technologies: HTML, JSON, REST, XML, XSLT, PHP, LAMP, MQTT;

Source Control: Git, SVN (Subversion), TFS, CVS, Clearcase, Source Safe;

Virtualization: VMware, Xen, OpenVZ, VirtualBox.

## EXPERIENCE

**2016 – Present, Software Development Consultant, Charles Schwab ([schwab.com](http://schwab.com)), Austin, TX**

Systems: Enterprise System Data Bus, Market Data and Quotes Gateway

A set of services and protocols that provide various financial and markets information to front office and client facing applications. The ESB is a high performance, secure and robust transport solution for data streaming across multiple systems inside the company and for external client applications.

It is built on top of MQTT protocol.

- Participated in a team that developed Enterprise System Data Bus - a complex solution built around Solace messaging system and MQTT protocol.
- Assumed the role of an interface for external teams, consulted them about development of their applications, discussed business and technical requirements for the data bus.
- Delivered trainings for external teams about the system and the tools we developed.
- Participated in defining the minimum viable product with the business departments.
- Worked with architecture team and local governance to get approval for the proposed solution.
- Consulted my team about tools and technologies necessary to build the reliable, secure, fast and scalable system.
- Implemented core component of the solution - Subscription Manager.
- Implemented Subscription Manager plug-ins API and an SDK and debugging tools for the plug-ins development.
- Analyzed performance and scalability of the system. Identified performance bottlenecks and formed a list of strategies to eliminate them.
- Facilitated transition of the development process from TFS into Bitbucket and Bamboo, set up the continuous release utilities. Worked with QA to automate testing.
- Migrated several services to the new messaging solution as a demonstration and a proof of concept.
- Implemented RateQuote WebAPI service that provided rate quotes for money market, bond mutual funds and mortgages.
- Used formal Scrum methodology.

Environment: C#, C++, Powershell, MS SQL Server, Redis, MongoDB, Aerospike, TFS, Git, JIRA, Confluence, Bamboo, Bitbucket, Windows, Linux, OAuth, SAML, MQTT.

**2013 – 2016, Software Development Engineer, NCBI ([www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)), Washington, D.C. Metro Area**

System: NCBI Login

An authentication system for NCBI and similar organizations in Canada, UK and South Korea. It allows users to authenticate with their federated accounts from hundreds of institutes and agencies all across US.

- Took responsibility for Authentication System.
- Communicated to dozens of institutes' IT services to establish or repair integration with NCBI authentication.
- Worked with internal teams to implement NCBI authentication for their projects.
- Implemented projects that allowed to improve user's accounts management, increase performance and reliability of the system.
- Worked with institutes in UK, Canada and Korea on projects to deploy and adapt instances of NCBI Login System for their needs.
- Ensured the system robustness especially during periods for scientists to submit their grant applications and reports.
- Established automated monitoring and statistics reporting.

- Reimplemented and replaced several components of the system which did not satisfy requirements for security, maintainability and monitoring. This helped to stay online during several brute force attacks from the Internet.
- Normal system load is about 20 million requests per week, system serves about 6 million registered users.

Environment: C++, C, Python, MS SQL Server, SVN, Git, JIRA, Confluence, Windows, Linux, OAuth, SAML.

**2010 – 2013, Head of Corporate Business Technology, Otkritie ([www.open.ru/en/](http://www.open.ru/en/)), Moscow, Russia**

Systems: Internet Banking, SugarCRM, OTRS, CreditRegistry, Accounting System, SMS Information Service

A set of systems designed for needs of Bank's corporate clients and VIP oriented business. Different systems are integrated. Some services are written from zero, another modified and adapted from open source projects.

- Headed development, integration and support of all information systems of Corporate Business Department. Reported to Vice President of the Bank.
- Lead from the beginning development and deployment of CRM system for Corporate Business.
- Introduced and developed a set of analytical systems.
- Worked as an interface between IT and Business departments.
- Lead multiple projects and organized interactions between key departments to resolve business tasks.
- Established real time monitoring of business critical infrastructure using a testing framework and the Nagios monitoring system.
- Led development of an SMS Information Service: robust and fault tolerant system which notifies recipients about specified events throughout SMS.
- Headed development of the integration between the old Online Banking System and the new one. Workload was 100,000 documents per day. System served 30,000 users.
- Improved Online Banking system stability. It became the most stable information system in the Bank despite strict limitation on budget.
- Designed a framework for internal system services development. It includes service management, logging, unified configuration management and a communication layer. It is used as a base for 5 different components serving ~50,000 transactions per day. The services uptime is ~6 months.
- Led continuous efforts to optimize response time of SugarCRM. It improved from 2 – 10 seconds to less than 1 second. At the same time, the approximate number of users increased from 200 to 3000.
- Obtained solid knowledge of corporate banking services.

Environment: C++, C#, Python, Perl, PHP, STL, Boost, Oracle, MS SQL Server, MySQL, SVN, ZeroC ICE, NUnit, CppUnit, UML, Redmine, Windows, Linux

**2009 – 2010, Manager of FX Market Team (AVP), Deutsche Bank ([db.com](http://db.com)), Moscow, Russia**

Systems: ARIS, Score

Two automated risk management systems that value more than 1M trades daily. They are written in C#, use external risk engine written in C++, running on DataSynapse grid. DBMS – Oracle. For some types of reports FireBird is used.

They are deployed to 2 Citrix boxes, 10 application servers and pool of 3k DataSynapse engines.

- Supervised system development as technical owner
- Delivered 4 major releases of the systems without issues

- Implemented a number of new reports
  - Implemented permissions system for books of trades and reports
  - Developed automated regression testing of critical reports in collaboration with testing team
  - Coordinated work of development team in Moscow and business in London, Singapore and South America
  - Obtained knowledge of valuation of asset derivatives - FX, Money Market, FI, IR Swaps
- Environment: C#, C++, STL, Boost, Python, Oracle, DataSynapse, SVN, UML, Jira, Confluence, Windows

## **2007 – 2009, Technical Team Lead, UBS ([ubs.com](http://ubs.com)), Moscow, Russia**

System: Termini

Solution designed for securities trading, pricing, order management, trade audit and much more. It is used for trading of different derivatives. Termini is composed of a large number of processes; a huge number of batch jobs, scripts and cron jobs; and at least 3 databases.

- Transferred ownership of the system from another external team in 1.5 months
- Organized team knowledge transfer
- Supported the system until its total decommission
- Assisted in step-by-step migration of dataflow into another new systems
- Maintained legacy code in C, C++, Objective C, Perl, C Shell
- Fixed a number of defects in source code
- Implemented a number of stubs and connectors for new systems integration
- Obtained knowledge of pricing of FI, FX derivatives

Environment: C++, C, Objective C, Perl, FIX, TCP/IP, Socket, Crontab, UML, Oracle, Sybase, MS SQL Server, C Shell, Jira, Confluence, Solaris

System: Ultrabond

Solution for Mortgage-Backed securities data analysis designed as client-server software. Client side has Excel-like interface with tables, figures, charts and support of data import and export to common formats. Platform: C#, Windows. Server side is distributed scalable computing system with single front-end and multiple back-ends, written in C++ for Solaris and Linux. Communication layer is Tibco Rendezvous and ZeroC ICE.

- Participated in planning and development of many small to medium projects
- Added support of new external data feed – an external database, Oracle
- Developed Perl script for conversion and import of historical data from a set of files
- Ported server side software for Windows – the code became cross-platform – Solaris, Linux, Windows
- Implemented general cache server on C#
- Worked with other teams and business users
- Obtained knowledge of valuation of fixed income and in particular Mortgage-Backed securities

Environment: C++, C#, Perl, STL, Boost, Threading, Syncfusion, Tibco RV, ZeroC ICE, Sybase, Oracle, CppUnit, NUnit, Clearcase, UML, Jira, Confluence Linux, Windows, Solaris

## **2006 – 2007, Senior Software Developer, CQG ([cqq.com](http://cqq.com)), Moscow, Russia**

Product: CQG for Windows

Solution for all professional trader needs. It includes market coverage for futures, options, fixed income, foreign exchange, equities and indices. It incorporates several different interfaces – depth-of-market order book views, charts, spreadsheets.

- Guided development team of 4 people as a team lead

- Performed performance analysis of the application, found several sources performance bottlenecks
  - Designed event based data provisioning for multithreaded user interface
  - Implemented new feature – Greeks values on depth-of-market trading interface – one additional column with corresponding valuated numbers – ActiveX control
  - Implemented interface improvement – Study Values on depth-of-market – every analytic curve on chart view that has value in price units can be shown on price column of DOM trading interface – ActiveX control
  - Used a set of well-known Design Patterns
  - Obtained solid knowledge of standard development process – CMMI, PSP, TSP, Scrum
  - Obtained remarkable knowledge of financial market terminology and business processes
- Environment: C++, COM, ActiveX, STL, Boost, WTL, MFC, CVS, UML, Windows

**2004 – 2006, Software Developer, ABBYY ([abbyy.com](http://www.abbyy.com)), Moscow, Russia**

Product: ABBYY Recognition Server ([http://www.abbyy.com/recognition\\_server/](http://www.abbyy.com/recognition_server/))

Server-based OCR solution for automated document processing designed for high volume workload with transparent scalability and fault tolerance.

- Designed and implemented GUI management console for the server
- Improved scalability for huge-size multipage documents processing
- Ported OCR Engine from Windows to Linux
- Implemented system layer API emulation for Linux
- Developed compiler of Windows resource file language
- Obtained remarkable knowledge of Win32 API and COM technology
- Released first version of the Recognition Server

Environment: C++, STL, MFC, ATL, COM, RPC, MMC, Windows Service, VSS, UML, Windows, Linux

**2001 – 2004, Software Developer, Intel ([intel.com](http://www.intel.com)), Nizhny Novgorod, Russia**

Product: Intel Performance Libraries (<http://software.intel.com/en-us/articles/intel-ipp/>)

Highly optimized cross-platform software functions for multimedia, data processing, and communications applications.

- Obtained outstanding experience in software performance analysis and optimization
- Implemented and highly optimized diverse functions for Intel processors: Pentium 4, Itanium, XScale
- Implemented algorithms for matrix processing, video processing, cryptography, big number arithmetic, XML processing
- Participated in delivery of 4 major releases of Performance Libraries
- Performed competitive performance analysis of MySQL engine built with GCC vs. Intel C++ Compiler. That was done for joint project of Intel Compiler team & MySQL
- Designed several libraries including cryptography and XML processing
- Acquired deep knowledge of cross-platform software development
- Investigated new technology – .Net – using open source implementation from Microsoft
- Proposed a set of improvements for .Net Framework that highlight Intel performance values
- Obtained important experience of working in a global organization and performing to its corporate values
- Coordinated team work of 4 developers
- Honored with a Very Special Thanks Award

Environment: C, C++, C#, Java, P/Invoke, JNI, Assembler, VSS, CVS, StarTeam, BitKeeper, NUnit, JUnit, Rational Purify, Intel VTune, UML, Windows, Linux, PVSC Tracker, Agile, XP

## **EDUCATION & CERTIFICATIONS**

2001 – MS in Physics, Moscow Institute of Engineering Physics, Russia

1998 – BS in Physics, Kuban State University, Krasnodar, Russia

EXCELLENT REFERENCES AVAILABLE UPON REQUEST