

1. ITware company introduction

Our company, **ITware Ltd.** was established in 2001. It is a 100% Hungarian-owned enterprise specialized in **custom software development**.

Our team of experts has been working for almost 20 years at the forefront of mobile communications, our founding members were trained by the first Hungarian mobile operator successes, thus we have quite a significant experience in the fields of telecommunication software development.

Our company has participated in a number of **large enterprise integration and development projects**, the success of which is due to the fact that we always try to create integrated systems with high availability and effective operation using **the latest**, the most appropriate **but proven technologies**.

For our large business partners, we develop **business-critical** solutions and integrate them into existing environments. Our customers make good use of **our experience of a decade** and **our high-level expertise** in the field of CRM, BILLING and web applications and portals.

We have evolved **one of the pioneers and experts of new technologies** in the Hungarian IT market through ongoing trainings of our colleagues. Our company can be characterised by continuous innovation and active R&D activities.

We believe that the key to our success is the fact that we understand our clients' business needs and their economic environment and support their cost-cutting or revenue enhancing developments with **complex solutions**.

The complexity of IT projects is very high, wording of the claims is a difficult task both on the customer and on the supplier side. **Therefore, after becoming acquainted with several other methodologies we voted for SCRUM**, which provides conceptual solutions for the handling of difficulties of IT projects that are proven in practice.

Our company has JIRA and Confluence licences. The required solution by Magyar Telekom did not arise licence questions.

The Outsmart Ltd. is the subcontractor of ITware with its 100% ownership.

1.1. Main company information:

- 100% Hungarian-owned company, annual revenue: more than 800 million HUF
- Domestic and international projects
- 90 employee, more than 70 IT experts
- Certifications: ISO-9001:2001, PMP (Project Management Professional), ITIL, CSM (SCRUM), OCP JP (Oracle Certified Professional, Java SE Programmer), ISTQB (International Software Testing Qualifications Board)
- Domain knowledge in telecommunication and mobile industry
- ITware is an **ISO-9001:2001** certified company.

Our specialisations

- Agile Software Development
- IT-systems development, integration, support
- Service Orientated Architecture development (SOA)
- Special development of telecommunication sector: SMS, LBS...
- Development of large enterprise web applications
- Georedundant, scalable applications development
- Project management
- Development of mobile applications (Android, iOS, Windows Phone, etc.)
- Quality Assurance, testing, training

Competencies

- JAVA, J2EE, JSP
- STRUTS(2), SWING, GWT
- Javascript, AJAX
- Ruby on Rails
- Centura, C/C++
- ORACLE, MS SQLserver, PostgreSQL, MySQL
- OLAP
- SOA, UML, RUP
- WEBlogic, Glassfish, Tomcat, JBOSS
- Microservices, Containers, Continuous Integration (CI)

2. References

1.1. Agile/Scrum project

User Management (Luxembourg)



Docler (DH) is a leading worldwide streaming provider. DH provides administrative support for its Group member companies as internal service center. **We have developed a solution for this problem with agile methodology** using Microservice concept; it provides complex services and high availability, quick response time and global infrastructure. With our solution our partner can manage 500,000 concurrent users out of 50 million and thousands of data requests per second.

Microservice infrastructure (Luxembourg)



For one our strategic partners we have rebuilt **with agile methodology** old applications in a new form, based on Microservices technology. The great advantage of this is that applications are built from a set of smaller services. This way they can be installed independently, can communicate with each other in a simpler way, components can be published and upgraded independently. It's also a benefit of this model that implementations divided by business processes, not by technological layers. Additional flexibility of the concept is that applications do not have to be written in the same programming language, or not all components have to use the same model to describe the business problem.

Magyar Telekom - Microservice infrastructure



ITware Kft. provides support for a new, virtualized development infrastructure and helps to improve development processes. Due to Virtualization and containerization operation teams facing new challenges, log files created by applications in the containers provided by the separation is difficult to reach, cross-application processes are difficult to track. With the introduction of microservices the number of moving parts is increasing exponentially, stressing operation teams even further. ITWare Kft. has developed a Docker capable log collector and parser application consisting of two major parts: the first is to observe and carry out the collection of log files (Agent), while the other (Generator) receives data from each Agent via Web Socket, parses the log entries, and saves them in a searchable database with metadata. The parser is plugin able and customizable. The standardized installation process and separation of packages create new opportunities and enables savings for Telekom. The company can benefit from and achieve higher efficiency in a way that it can give more freedom and responsibility to components supplier teams without sacrificing security and interoperability.

Hewlett Packard Enterprise – Telecommunication Application Development Services



HPE delivers several IT subsystem solutions for Magyar Telekom, including JAZZ. Our experts provide here business requirement analysis, architectural and functional design, full range End2End supply solution, and high level quality assessment (QA). Our colleagues actively support the activation of each project as well as provide ongoing L3 support. **This project operates according to HPE's tailored agile methodology.**

Nokia Siemens Networks - Cloud Version development and Migration of Mobile Device Management



Nokia Siemens Networks Hungary is one of the major IT service companies serving mobile phone networks in Hungary. We develop here Cloud migration of SADM (Serve At-once Device Management). The solution is used by mobile operators e.g. large Indian companies with hundreds of millions clients, and other service providers from almost all continents) in order to provide for their customers device- and network related settings (e.g. SMS, GPRS v. MMS configuration), automatically. ITware Ltd. participates in this project as subcontractor. For project tracking open sourced JIRA, for implementation Linux shell scripts used with Amazon Web Services Elastic Computing Cloud (AWS EC2) API, beside our internally developed, web-based integration Cloud Framework.

Selenium - Automated Testing (Luxembourg, Japan)



Today, software development is a never-ending process where existing code is changing constantly, day to day. These changes have to be retested permanently, in order to avoid recurring errors.. We created **automated Selenium Testing solution that is** used continuously both in our development work and for our content-provider partners. Huge advantages of this solution that pre-written

test cases can be made run on the code base automatically, at any time. Using Selenium, potential tester errors easily can be eliminated, significant working time can be saved. burnout syndrome of testers can be avoided, detailed and automatic report can quickly be provided for the developers. Selenium tests can be executed and played back parallel, it's also a major step ahead in quality assurance.

1.2. Japan references

Sunbears – Sport game manager



SunBears -We developed an application for the Japanese Ice Hockey Team and the Japanese Ice Hockey Federation, based on operation intelligence type of needs, **using SCRUM methodology**.

The solution is a hybrid system recording and processing events and metadata related to sport/game/player/IIHF rules. It runs on Android tablet client, dynamically scalable, AWS EC2 cloud-based, backend JAVA). It records defined events created by the users, records used to build **agile data warehouse structure**. This is a niche market application for global sport market. It is a professional working tool that helps to optimize game strategy and team trainings, based on the analysis of the recorded events.

Kojimori – Remote measurement

Kojimori – an application based on Japanese business needs with Japan IoT/ M2M Cloud, **developed with agile methodology (using SCRUM methodology)**.

This solution uses wireless technologies for remote data logging that combines Japanese cutting-edge technology with US market trends, German and Taiwan sensors and ITware innovation. The system communicates with more than 50 sensors and sensor families and is ready for other sensors to be fitted on. In Oyasai IoT Cloud it centrally brings together various functions associated with remote monitoring of more than 200 Japanese installation points, in different fields of applications (Precision Agriculture, Food Industry, Tourism, Healthcare, Manufacturing, R&D).

Thanks to the state of the art architecture the system's real innovation can be extended nearly endlessly and in full accordance with the needs of specific market segments, allowing the integration with Smart Grid systems.

2. Web and Mobil Application Development

KITE Ltd. – Individual Sales Support



The ITware Ltd. provided an Android-based solution for individual sales support for KITE Ltd. as well as server side components performing KITE ERP system and mobile application communication. This solution, supplied by ITware and **developed with agile methodology** covers the complete sales process from providing information for meeting preparation to handling each individual order.

KITE Ltd. – Electronic Worksheet Management



KITE Ltd. commissioned our company to develop an electronic worksheet support mobile application for their service business. This system, **developed with agile methodology**, fully replaces the previous paper-based administration, thereby reducing the administrative burden on this branch of the business. Apart from the sheet-fill function, this solution supports the viewing of service history of each machine and a variety of excipients, as well as surveying customer satisfaction.

Ecolane (Finland/USA)

The ITware Ltd. in collaboration with the Ecolane USE subsidiary in Finland provides agile software **development service** in the project aiming at refactoring and modernizing the company's Front-End and Back-End systems. **Technologies used** within the framework of the project: **Ruby on Rails, Java, four-person Scrum team with a local Scrum Master.**

3. Telecommunication sector

Magyar Telekom – JAZZ: Development of Mobile Billing and Customer Management System



Since 2001, with an outstanding expert team, we have been continuously participating in the IT and software development work of Magyar Telekom (T-Mobile), especially in the development of JAZZ system.

Our associates provide a full-scale execution during the development processes from planning, through implementation and testing. We have prepared the documentations and codes in line with the strict standards of Magyar Telekom.

In addition to planning and development of JAZZ we have also performed JAVA programming, service development in BEA Integration environment, service planning and Dialogue development tasks.

Magyar Telekom – Pillangó Project CRM and Billing Consolidation One of the Fifth Largest Hungarian Suppliers



In 2010 Magyar Telekom began a large-scale IT transition. The Butterfly Project was one of the largest Central European IT projects between 2010 and 2013; its aim was to consolidate billing and CRM systems used by the company. As the developer of one of the most important billing and CRM systems of Magyar Telekom - being one of the fifth largest Hungarian solution provider companies - we were actively participating in this project. Our colleagues with high level business and technical skills worked continuously on this project **from business analysis through planning, solution delivery and testing.**

Due to continuous professional trainings and experiences gained from participating in various processes of the Butterfly Project, our staff's know-how has become exceptionally wide and deep that gives us the ability to completely understanding the Telekom's main systems.

Magyar Telekom : My T-Systems.HU Portal



In 2009 the BUSINESS Business Unit (BBU) of Hungarian Telekom (T-Systems) has decided to create a new, online self-service portal for its enterprise clients, making the popular services

like Virtualoso, Telematrix, Easyline and Webshop, etc. available in a standardized environment with the ease of single sign-on access. As the result of the 9 months long system integration and development project, ITware delivered the new My T-Systems portal fully up to all customer requirements.

Online customer and chat service is available as well, in order to support invoices related tasks and several other functions.

4 years later Telekom decided to renew My T-Systems web portal. ITware played substantial role in its re-designation.

Magyar Telekom : Virtualoso (new name ICT) service

T . . . Virtualoso is a cloud based service for small and medium sized companies. It provides services like useful IT applications for office or out of office environment. Virtualoso services available in monthly, low cost subscription model.

Our professional team started the development in August 2009. The role of the technical provisioning system is integration of subsystems, e.g. Microsoft HMC, Cisco WEBEX, EMC AVAMAR, etc.), and billing system. Furthermore, it delivers billing data into the billing system. As a result of ITware's work, the following systems become part of the integration: Virtualoso VoiceCenter, Virtualoso Backup, Virtualos SMS and Virtualoso Blackberry Services. Additionally in 2010 we delivered the localized version of Virtualoso for the subsidiaries of Magyar Telekom, namely Combridge and Cmogorski Telecom. In October 2010 the Romanian and Montenegrin versions of Virtualoso went live.

Magyar Telekom – Smart Home Load Test

T . . . Smart Home service supports remotely controlling homes and household items. ITware team provided pre-test and load capacity simulation services for the new application development program in DEV and ITST environment. **Test processes generated response time (server acknowledge) and lost/unanswered messages were logged** and analysed by us. The results for BE security and reliability rate were based on a number of successful or unsuccessful connected users.

Magyar Telekom – Telematrix

T . . . Telematrix (TMX) is a service provides PBX related features for mobile and PBX based connections, such as short dial number, group management, black and white lists handling, etc. for MT's corporate customers. TMX also ensures visibility of business customers' accounts, supports the run of online and offline self-ordering services.

New TMX is a merge of three different IT systems: CSC - Corporate Self-service, Telematrix customer records and Electronic Traffic Information (Elektronikus Forgalmi Tájékoztató - EFT). Besides Telematrix server and client-side development, we provide other, highly complex integration and development support for systems, based on J2EE and SOA.

Magyar Telekom – Mail Migration project

T . . . ITware worked on mailbox management functionality development of Magyar Telekom's "Honlapprov provisioning" application. Mailboxes migration from MT Virtualoso (HMC) to "M@Xmail/Horde" took place. We have been responsible for the maintenance of

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“MaX” mail system’s self-care interface and functionality and L3 level support, since the completion of the project. Implemented features: mailbox management, mailing list management, handling customers with more domains, assigning a mailbox to a domain and revocation, assigning a mailing list to a domain and revocation listing, assign and withdraw user domains.

4. Other referencies

