

COMPETENCES IN SOFTWARE DEVELOPMENT

CORE VALUES OF OUR COMPANY:



SPEED

only deliverables on-time are acceptable



QUALITY

we deliver efficient, business-critical systems operating 7/24 hours



LEARNING

concentration of up-to-date, competitive expertise in the field of software development and organization of work

1. Our Competences in Software Development

Most of our development teams consist of Java developers with 5 years of project experience on average. We also have senior colleagues and teams with PHP, Drupal, Oracle expertise. Strong and reliable delivery capabilities of our teams rely in their shared project experiences as SCRUM teams. Based on their individual, high-level IT expertise, they steadily finish the deliverables they committed to in every sprint.

Professional and QA oversight of the SCRUM teams is managed by architects and lead developers. All our developers are full stack so that the developable functions can be based on business logic without technological limits and constraints. Consequently, considerable business functions are delivered after every sprint. *New functions are immediately handed over to Client after sprint closure for testing or even for installation, according to our agile development methods.* This approach allows us to go live with function packages every 2-3 weeks.

Our teams have experience in projects with English and Hungarian working language. They have sectoral experience from markets of finance, telecommunications, public administration, health care, education and energy.

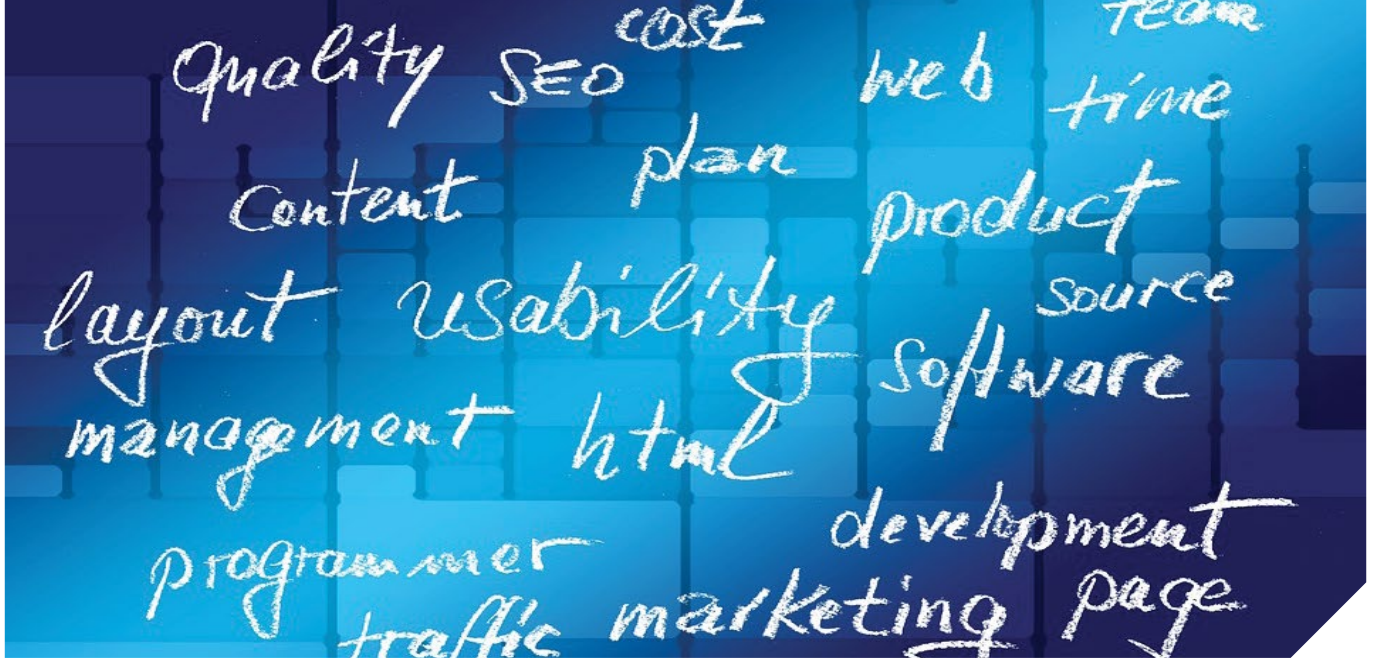
2. Business Analysis

Our BA methodology is based on IIBA standards (www.iiba.org). Business analysts at Navitasoft are capable of converting client needs to software development tasks with high efficiency, creating a bridge between programmers and business professionals of the client company. Generally, the following BA tools are used during analysis:

- Data Modelling
- Business Requirement Analysis
- Specification of function-based requirements
- Specification of non-function-based requirements
- Organise and Hold Interviews, Workshops
- Building Use Cases and Scripts
- Create Screen Plans
- Document Analysis
- Business Code Analysis
- Process Modelling
- Metrics & KPI
- UML tools
- Risk Analysis
- Benchmarking
- Organisation Modelling
- Create System Specifications
- Write User Manuals
- Software Demonstration, Presentation
- Software Usage Trainings

With background in either IT or economics, after years of project experiences our BAs are well aware the success criteria and major cornerstones of IT projects. Their most important competitive advantage is that they know the programmers' mindset, thus can efficiently shape the team's work to become delivery-proof.

Deep assessment of business processes is provided by the business analysts based on our analytical tools and methodologies, and on their wide range of earlier work experiences (they have sectoral experience from markets of finance, telecommunications, public administration, health care, education and energy). Assessment is required for thorough and profound specification of software functions.



3. Software-side Development

3.1. BACKEND DEVELOPMENT

Business logic of our softwares is developed in enterprise Java web application environment in Eclipse developer environment. Our applications can be installed in any servlet container environment with servlet 3.0 compatibility.

As application server, we use Tomcat 7 webserver, but other kind of webserver applications can also be used.

3.2. RELATIONAL DATABASE

From database technology point of view, we are database-independent as the business logic is implemented the JAVA layer. We have expertise in license-based (Oracle, Microsoft SQL), open source (Postgre, MySQL, H2, MongoDB) and in-memory (Oracle, Hazelcast, Apache Ignite) RDBMS technologies.

3.3. APPLIED TECHNOLOGIES IN SERVER-SIDE DEVELOPMENT

General components

- Spring Framework
- Spring Security
- Logging: Slf4j, logback
- Parser Generator: ANTLR
- Workflow Management: Camunda

Database Connection

- JDBC
- JPA
- Hibernate
- Spring data JPA

Service Layer

- Webservices
- REST webservice
- Spring MVC
- Spring-flex
- BlazeDS
- Jackson
- Swagger
- Spring integration

Version Management, CI:

- Git
- SVN
- Maven
- Jenkins



4. Client-side Development

We build on Javascript and html (HTML5, CSS3) technologies on the client-side. As framework, we rely on AngularJS and have experience in Flex technologies too. For the coordination and support of front-end technologies our company employs UI architect.

5. Web- and Mobile Application

For content management and web development, our experts use the free and open-source Drupal content-management framework (CMS). Besides Drupal, we have considerable experience in AngularJS, Node.js, iOS and Solr. For development LAMP standard is applied, which includes the following four open-source technologies:

- Linux, Apache
- NGINX, MySQL
- Percona
- MariaDB, PHP.

6. Testing

Test Driven Development (TDD) policy is followed during the development sprints. The tester and the SCRUM team define test cases as acceptance criteria for the business functions a priori the development. Unit tests are used for elementary testing of the functions. These are written by the developers and re-runs with every new build. Test-coverage of our softwares is closely monitored and maintained on the level set at the beginning of the project. Business function testing means that our testers are responsible for the full-scale business compliance of the functions. Through end-to-end and integration tests, the testers make sure that the new functions integrate in the application.

Before version release, regression testing is used to check compatibility of previously handed over functions with the new ones. In addition, special load tests are used to monitor the potential changes in performance levels. Role of automated interface tests is increasing besides manual testing. These run automatically with every new build.

All our testers have ISTQB qualifications.

- Testing Tools and Technologies:
- Selenium/Protractor
 - Jmeter
 - Junit
 - Hamcrest
 - Mockito
 - Spira test

7. Work Methodology

Delivery is based on agile software development methodologies with SCRUM principles. All our projects are design with the goal to develop software prototype in a rapid pace so that Client has numerous and early opportunities to give feedback. This significantly decreases risks associated to the project. Flexibility is another advantage of agility as it allows for change requests during project until the final sprint, without altering the completion deadline or budget (considering that the changes are in line with the sum of deliverables quantity). Development sprints are generally 2-3 weeks long, decided together with the Client in advance of the sprint start. Client usually participates in the sprint closing product demos, where discussion and controlling data analysis also takes place about the progress of the project. Daily standup meetings, sprint planning, retrospective evaluations are all essential elements of our methodologies.¹

¹ More info: <https://www.scrumalliance.org/>

8. References

- FGSZ Zrt.
- Ukrtransgaz (Ukraine)
- Bulgartransgaz (Bulgaria)
- Alpiq (Switzerland)
- MMBF Gas Storage Zrt.
- HEP (Croatia)
- PSP (Croatia)
- ELMŰ-ÉMÁSZ Energiakereskedő Zrt. (Innogy Group)
- MET Hungary Zrt.
- CEEGEX Zrt.
- Budapesti Erőmű Zrt. (EPH Group)
- Hungarian National Museum (www.mnm.hu)
- Petőfi Literary Museum (www.pim.hu)
- Video Education Portal (www.zanza.tv)
- New York real estate management portal (www.cityty.com)
- National Authority for Consumer Protection (www.nfh.hu)
- Farmit – agriculture portal family (www.farmit.hu)
- Dorsum Kft.
- Virgo Systems Kft.

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