Go low code with OutSystems
Readjusting the skills for the digital age with low-code

Grab’n’Go, 22nd April 2020, Terkel Tolstrup and Jean Breinholt
Agenda

- **Readjusting the skills** for the digital age with low-code
- **OutSystems** as the leading low-code platform
- Use cases
Readjusting the skills for the digital age with low-code
Enterprises need to move from ‘doing digital’ to ‘being digital’

**Exploring**
Leverage traditional technologies to automate existing capabilities. Dabbling with digital. No real change to organization.

**Doing**
Leverage digital technologies to extend capabilities, but still largely focused around same business, operating and customer models.

**Becoming**
Leverage digital technologies – becoming more synchronized and less siloed – with more advanced changes to current business, operating and customer models.

**Being**
Business, operating and customer models are optimized for digital and profoundly different from prior business, operating and customer models.
We have observed a jarring mismatch between the digital aspiration and traditional IT Operating Models

Digital aspiration
Future-proof businesses need to put new offerings into the market...

Rapidly
Successively
At scale
The need to provide custom experiences and transformation towards digital is crucial for business to survive. Unfortunately, most organizations struggle with:

- Massive backlogs
- No time to innovate
- Scarce resources
- Complex systems
Redefine digitalization with low-code
Low-code development platforms are a game changer for IT and business development

**IT**

- Low-code **reduces the complexity** of processes and systems for IT development

- With simple and visual LCAPs, developers can **build and release apps or functions quicker**, and gain instant feedback

- Combined with Agile, DevOps and tech such as Cloud, low-code enables **agile delivery of incremental** and disruptive digital solutions

- The speed and simplicity of LCDPs enable and complement **microservice architectures**

**Business**

- LCPDs enable **rapid response** to changing business priorities and customer needs

- People with **limited development experience** can contribute to building apps to test business solutions

- Low-code **use cases run across a broad spectrum of business scenarios**, from customer engagement, to process support, to the extension of core systems

- The use of **LCDPs reduces dependency on IT** – while also improving the intra-organizational collaboration
The solution: Low-code

- Visual full-stack development
- Full life cycle management
- Deploy to any device

- Transform your business faster
- Reduce your overall IT costs
- Increase your dev team productivity
- Build an incredibly Agile digital team

Reduce your overall IT costs
Increase your dev team productivity
Build an incredibly Agile digital team
What is low-code?

Traditional hand-coding is...

- Expensive
- Slow
- Hard to change
- Limited by resources

A low-code platform is...

- Visual
- Fast
- Enterprise-grade
- Easy to learn
OutSystems is a low-code platform with unbeatable speed for digital transformation
OutSystems is a recommended leader by Forrester, Gartner and Ovum

OutSystems is a market leading platform for low-code development of enterprise applications with strong market recognition.

**Gartner** Magic Quadrant for Enterprise Low-Code Application Platforms, 2019

**Forrester** Low-code Development Platforms for AD&D Professionals, 2019

**Ovum** Decision Matrix for Selecting an Enterprise Mobile Application Development Platform, 2018 - 2019
OutSystems high level architecture and tools

The OutSystems platform consists of a suite of products to develop, implement, operate and monitor solutions.

### Service Studio
- Frontend
- Backend
- Automated unit or integration tests
- REST/SOAP APIs (produce or consume)
- SAP integrations
- Manipulation of data from external databases
- (extend UI by implementing own JavaScript)

### Service Center
- Monitoring and logging application
- Handles configuration management
- Handles runtime execution of each application, from taking it offline/online to managing each tenant configuration
- Provides performance reports

### Platform Server
- Delivers the infrastructure needed
- Converts to .NET or Java code
- Builds, packages and deploys applications

### Life Time
- Handles all environments in Cloud and on-premise
- Configures security aspects on infrastructure level
- Automates deployments to each environment

### Integration Studio
- Extend functionality by scripting additional features in C#
- Bring in existing libraries/features as .dll files

### Additionlly, OutSystems provide:
- **Users**
  Pre-built application to handle roles, groups, users across all applications on environment.
- **Documentation of solution**
  Creates documentation of solution (implemented logic, process flows, entity diagrams) and documentation of APIs.
- **App feedback**
  Allows for users/testers/developers to provide feedback with screen information by the click of a button.
Low-code development of enterprise applications
OutSystems enables your organization to build web, mobile and reactive applications

- **Web applications**
  Build a traditional responsive web application with the support of a big community

- **Mobile applications**
  Three ways for developing mobile applications:
  - Native mobile (iOS or Android) app that works offline
  - Responsive web app adaptable to multiple devices and browsers
  - Backend for the custom-built native mobile app

- **Reactive applications**
  Newest application type by OutSystems, for which the development is similar to mobile apps – but it cannot be transformed into a mobile app.
  - Utilizes server-side and client-side logic, asynchronous data fetching and reactive client-side rendering
  - Performance-wise better than traditional web applications
Discover the ready-to-use apps and components in OutSystems
Kickstart your app development from the many templates and UI components provided by OutSystems, or get inspired by the OutSystems Forge community

Get a head start with prebuild screen templates
OutSystems provide a wide range of screen templates that can be used to speed up initial development or as inspiration.

Drag and drop ready-to-use UI widgets and components
All common UI widgets and components are included in OutSystems. Choose your component, configure it – and voilá!

Discover more options in OutSystems Forge
Access more options through the open-source community, which contains 3300 apps, components and widgets – get inspired or create and share your own.
Visual logic flow
OutSystems allows for logic to be implemented without the use of any programming language.

- Define data entities and models inside Service Studio.
- Aggregate data from the database by picking sources, filters and sorts.
- Test it out immediately.
- Create logic for client-side or server-side.
- Make decision trees through expressions created with assist from OutSystems.
- Can also be used to validate inputs.
- Reuse logic across screens or isolate if desired.
- Assign values to variables.
- Can also be done for each element in a list or loop.
- Raise exceptions if something is wrong to make user aware.
- Design as well the exception handling and messages.
System integrations
Integrate your OutSystems application with the remaining system landscape to utilize external producer systems and consumers

Off-the-shelf database connectors

Relational databases
- Sql Server
- Oracle
- MySQL

NoSQL databases
- MongoDB
- CouchDB
- AWS Dynamo DB
Get instant feedback from users and automatic tests
OutSystems supports feedback directly within the mobile and web applications, and the fast feedback loops enables more agile development

App Feedback
OutSystems provides a pre-built functionality called App Feedback that allows users to provide feedback by the click of a button while using the application.

- Feedback can be given as picture and description
- Feedback logs person and timing

Integrations with defect management systems
- Feedback can be collected and handled as part of the OutSystems. It can also be integrated with thirdparty defect management systems like Jira, Asana, Zendesk and Trello.
- When automatic tests fail, defects can be created and shipped to the external defect management system by the click of a button.
Use cases
Get started with OutSystems
Identify use cases within your business to gain experience with the platform and build the capabilities needed to utilize the power of low-code in your organization

Some areas of business have proved ideal for kickstarting the development of web and mobile applications with OutSystems:

- Areas with opportunities for utilizing the functions of mobile phones, such as using photo documentation or geolocation to register deliveries, locate samples or document repairs.

- Areas requiring simple collection and display of data, such as submission of forms, requests, reporting and registration of damages.

- Areas characterized by many system integrations – the development of new solutions in such area would be too complex.

- Areas characterized by few roles (customers buying specific products) or by governance processes (approval of invoices and purchases).

- Areas where the IT landscape is characterized by legacy systems in need of new user interfaces that are easy to develop and implement.

- Isolated areas where systems are built on simple and specific business logics.

Estimated development: 2 weeks – 1 month
For a main player in ground distribution in Angola

The company needed a new solution to handle issues with capacity management, high levels of unreported damages to vehicles, fuel and distance monitoring, drivers’ performance management, control of documents validity, tires and keys management, and SAP information maintenance. Through the development of a new mobile app for fleet management, the company benefits from a higher level of information integration and reporting, thereby extinguishing the need for Excel as a management tool.

**Deloitte advised and supported the company with:**

- Designing and implementing a complete fleet management solution
- Ensuring SAP integration
- Digitalizing processes, ensuring real-time data to support operations and thereby eliminating the need for Excel
- Driving training activities for adoption of the mobile app

**Time spent on technically developing the solution:**

3 months ~ 2000 hours
Wine production platform
A wine company replaced their outdated wine production system with a user-friendly mobile solution for all their wine production processes’ activities, from planning and operations to costing and control, integrating with sensors and other automations to ensure more accurate records, efficiency and transparency of all actions.

Deloitte advised and supported the company with:
• Defining user journeys and required functionalities
• Defining Minimum Viable Product (MVP) and product backlog

Time spent on technically developing the solution:
First implementation: 4 months ~ 3500 hours
Second implementation: 3 months ~ 2500 hours
Ride Sharing platform
A mobility company launched a new Ride Sharing platform to complement their mobility portfolio. Their ambition was to create a new web/mobile platform from scratch that was better than the other already established competitors in the market. The app created new revenue streams and increased brand awareness.

Deloitte advised and supported the company with:
• Defining Minimum Viable Product (MVP) and product backlog
• Implementing Agile methodology to optimize delivery

Time spent on technically developing the solution:
MVP: 3 months ~ 2500 hours
Additional features: 3 months ~ 2500 hours
Restaurant Order App
The company had identified the need to modernize their customer service with the addition of a mobile application that would allow the company to deliver a digital experience as other players in the market were delivering. A new mobile app allows the company’s customers to have a fast way of ordering food online while being able to provide a faster service to their customers in return through a tablet application for managing orders.

Deloitte advised and supported the company with:
- Developing business case, incl. prototype and proof of concept
- Implementing Agile methodology to optimize delivery

Time spent on technically developing the solution:
2 months, ~ 1000 hours
We’re witnessing a turning point in the market - one where the demands for digital transformation in the enterprise have far exceeded the capacity of IT teams to deliver. The only option is to **rethink, retool and reengineer** how technology gets delivered.

*Paulo Rosado, Outsystems CEO, 2016*
Want to learn more? Do not hesitate to contact us!

Terkel Tolstrup  
Partner, Deloitte Consulting  
+45 30 93 44 33  
ttolstrup@deloitte.dk

Jean Breinholt  
Senior Manager, Deloitte Consulting  
+45 30 93 44 39  
jbreinholt@deloitte.dk