



Calcolation of the functional size and productivity benchmark: the Dedagroup experience with WebRatio

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1. FOREWORD

1.1 WEBRATIO PLATFORM

WebRatio Platform¹ is a low-code application development platform that uses the OMG standard Interaction Flow Modeling Language (IFML) to visually define the user interaction flow with the application, and the BPMN standard to define the application processes logic without the need to write code. WebRatio Platform produces Web and Mobile applications to run on any Java enterprise environment. The code of the applications produced is open and based on standards, without the use of any proprietary runtime, both client-side and server-side. Dedagroup Public Services is a WebRatio partner and has a Competence Center on the platform with IFML certified resources.

¹ WebRatio Platform is produced by the company WebRatio s.r.l. For more information about WebRatio, please go to <http://www.webratio.com/>

1.2 LOW-CODE DEVELOPMENT PLATFORMS

Low-code development platforms² (LCDP) allow the creation of applications through the use of graphical interfaces and configuration systems that reduce the need to write code to a minimum.

In particular, WebRatio's low-code technology is also defined as "model-driven", that means guided by graphic models, which replace code writing, and through which it is possible to define the interface, the interaction and the behavior of the applications generated.

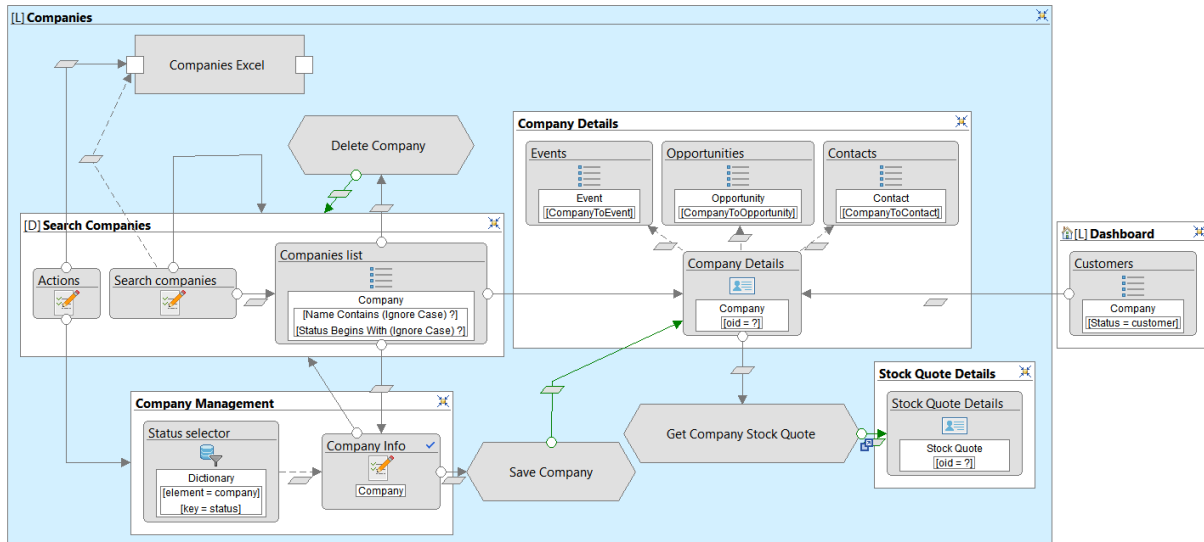


Fig. 1: Example of graphic model of the development platform

The use of low-code platforms has multiple advantages for companies, which we can divided according to the stakeholders in the organizations:

- **For the IT department**
 - The speed of development, thanks to the modeling, the automatic code generation, the use of graphic, project and plugin templates;
 - The standard quality of the generated code, due to the lack of possible human errors;
 - Automatic update of the generated code, thanks to the research and development of platform vendor companies;
 - Less need for development skills, given the simplicity of visual modeling;
 - The possibility to model only once and deploy for multiple systems (both web and mobile for example);
 - A reduction in the update and maintenance time of the applications.
- **For the personnel**
 - The digitalization of processes, thanks to the greater number of applications available;
 - Process automation, thanks to the development of more complex and intelligent software systems;
 - The perfect compliance of the applications to the company's specific processes, thanks to the customization of the developed systems.

² https://en.wikipedia.org/wiki/Low-code_development_platform

- **For the Managers**
 - Greater participation in applications development, thanks to the simplicity of the visual notation and the speed that allows changes in real time;
 - More control and better management of activities, thanks to digital tracking and analysis through applications;
 - Less Time-to-Market, thanks to the speed of development;
 - The possibility to create MVPs (Minimum Viable Product) in a few days and scale the application based on market and user feedback;
 - The possibility to have more detailed analysis to make more reliable decisions, thanks to the use of company data with dedicated intelligent applications.
- **For the whole company**
 - Lower applications development, maintenance and update costs;
 - The possibility of implementing a bimodal strategy: allocating few resources to the development and maintenance of tactical applications and more resources dedicated to strategic applications;
 - Reduced pay-back period for applications: normally between 6 and 12 months;
 - More computerization, innovation and modernity, thanks to applications that allow the renewal of processes, procedures and information systems;
 - More productivity, with applications that simplify and speed up personnel activities;
 - Less “shadow-IT” effect, that is the development of applications created directly by the personnel for specific needs (for example applications based on Windows Excel);
 - The possibility to respond more quickly to the growing needs of application development, given by internal or market needs;
 - Greater use of company data, thanks to the possibility of developing customized applications suitable for business needs for extrapolation and analysis of information;
 - Continuous innovation, thanks to the simplicity of modifying and updating software systems.

2. INTRODUCTION

This document has a double objective: to calculate the functional size of a software development project using the Function Point method and, on this basis, to carry out a comparative analysis of the productivity level obtained in the development using the WebRatio Web Platform tool with respect to the traditional development.

The functional size of the intervention was calculated through the Function Point Analysis (FPA) and, as usual in this type of analysis, in order to make the practical application of the method usable even to non-experts in the field, the whole procedure of calculation is detailed by recalling the Counting Practices Manual (CPM) of IFPUG in version 4.3.1, in particular in the version translated into Italian (ISBN 978-0-9830330-1-1).

For the analysis of productivity, it is compared the one achieved by Dedagroup Public Services with WebRatio Platform with the market references published by the International Software Benchmarking Standards Group (ISBSG) in (2) and by C. Jones in (3).