



Virtual Shore

A revolution
in collaborative development

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BULL

Architect of an Open World™

New demands for application development

Even though new technologies make it possible to build powerful and interoperable information systems, the industrialization of software development will be key to achieving the responsiveness a changing business world requires.

As the demands placed on business evolve, it is time to look at new approaches to project management...



Needs are changing...

The services development manager of a major telephone operator recently remarked on the need to continue respecting highly stringent demands in terms of time-to-market while increasingly taking into account the suggestions of both customers and partners as their ways of using services matured. This need to translate changes in business practice into software – virtually day to day – is now common to most organizations, just as Information Technology has become omnipresent. These days, keeping pace with innovation, competition and regulation almost always means having to develop new functionality, adapt management tools, interface applications, integrate new technologies... And all rapidly, reliably and cost-effectively, of course!

Subject to this kind of growing pressure from the different business functions, IT departments are responsible for software assets that are not only growing incessantly, but also constantly changing. Applications must be continually maintained, enriched, renovated, rebuilt... And now the development work involved – often a thankless task which gains little recognition within

the organization – itself risks running aground. Firstly because highly diverse technologies of different ages and based on different logical principles, heterogeneous platforms and the absence of documentation are making the job increasingly complex. Add to this the fact that highly specialized resources are needed, not just experts in both yesterday's technologies and those of tomorrow, but managers capable of taking on projects of markedly different characters. And finally, the stakes are getting ever higher, and the pressure on costs, quality, and timescales has never been so strong.

...so are technologies and methods...

But technologies and development methods have evolved considerably over the last few years. The introduction of collaborative environments, and responsive methods better suited to constantly-evolving projects and to exploiting the advantages offered by new languages such as Java, PHP and Python, and the widespread availability of libraries of re-useable objects all contribute in their way to facilitating the development of complex solutions. To this, we must add the increasingly frequent

adoption of good practices, whether these are standardized (ITIL, CMMI...) or not (Extreme programming, continuous integration...), and the maturity acquired by the players involved (for example, companies providing Maintenance in Operational Status (MOS) and Operational and Maintenance Support (OMS) services on successive projects. Under these conditions, IT managers could appear well placed to tackle the job of meeting these new requirements, despite the enormity of the challenge. But analysts are continuing to estimate that less than one project in three is completed within budget, on time, and with the expected levels of quality.

... but not the way projects are run

How, then, can we explain such a high failure rate? One possible hypothesis is as follows: the way projects are managed

has not developed at the same pace as the technologies and development methods themselves. Based on the 'cascade' approach, and a linear and rigid breakdown into groups of tasks, traditional project management methods lack responsiveness, and do not allow us to reap the benefits of recent changes taking place in industrial development ecosystems. How can we orchestrate the efforts of all the parties involved? How can we optimize costs and processes? So far, many of the answers to these questions have proved to be imperfect. Offshoring was invented, to reduce costs and make up for the scarcity of resources; and then there was nearshoring, designed to restore a degree of local proximity, so necessary to healthy communication on complex projects. But these two approaches, relevant though they may be, only resolve part of the equation and don't properly reassess the way projects function globally. To overcome these shortcomings, and to take advantage of the potential the most recent technologies and development methods offer – and above all to be in a position to ensure that an organization's software capital evolves to keep pace with changing business practices – we need to devise a new approach to project organization and management. And this is precisely what Bull has done, in developing an innovative new approach: Virtual Shore.

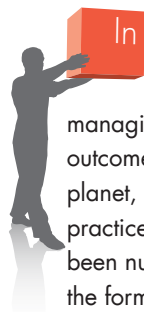


The Virtual Shore revolution

Development by a community, knowledge capital, continuous enrichment and the mobilization of the best resources: all these are key criteria for Virtual Shore

Breaking free from the traditional, Taylorist approach to projects – which consists of dividing projects into independent slices that one endeavors subsequently to join together – Virtual Shore is situated right at the crossroads where the collaborative development methods used in the Open Source community and the ‘shoring’ principle (the flexible sourcing of resources) meet.

Virtual...



recent years, the Open Source community has naturally instigated innovative ways of managing projects to ensure successful outcomes. Scattered across the whole planet, but linked via the Internet, good practices in collective development have been nurtured and have emerged in the form of development and project management tools that are especially well-suited to this way of operating. Shared virtual environments, in particular, enable all participants to ‘meet up’, exchange ideas and collaborate. No longer is it a matter of simply adding extra people, as in the traditional approach, but rather of combining the ones you already have.

As a result, we are starting to find that projects are benefiting fully from the network effect, and in particular from a more seamless articulation between the different project segments, unprecedented responsiveness to new ideas and new technologies, and a type of software ‘survival of the fittest’ that makes it possible to rapidly weed out any mediocre contributions. What is more, this approach means that we can mobilize the right skills at just the right moment, which is particularly important for complex cross-

functional projects that involve multiple contributors (technical, business, users, customers...). The approach is similarly well-matched to agile methods such as continuous enrichment, or the re-use of software capital, the quality of which is guaranteed because the community is constantly monitoring it.

... Shore...

With its long-standing and strong commitment to the Open Source movement, Bull has taken the step of capitalizing on this experience and integrating it in an industrial approach designed to meet the needs of business projects. The fundamental principle is to create the right conditions – just at the point when the project is due to start – and bring together the most appropriate resources in a shared and structured environment. From offshore or near shore, we are now moving towards Virtual Shore: the key criterion is no longer geographic location (which has disappeared with the advent of the Internet) or simple cost reduction, but the formation of the best possible community with regard to a project’s economic, technological and business objectives.

In order to achieve this, Bull has developed NovaForge™, a virtual software development factory that brings together all the tools needed for collective software creation. Bull has also put in place an integrated network of service centers, with specialist resources that can be mobilized for each individual project. Finally, Bull is developing a highly participative culture internally, for those projects requiring a new kind of governance. In his or her role as an animator as much as a project manager, each project leader is charged with stimulating creativity within the community, and encouraging a dynamic

of success while ensuring that everyone involved respects the constraints of cost, timescale and quality.

... for the benefit of customers

By honing Open Source development methods, and molding them to fit the specific needs of enterprise projects, Bull sees Virtual Shore above all as a response to the challenges its customers are now facing when it comes to application development and maintenance. Indeed, this approach really does enable the production resources that are brought into play to be fully optimized as a function of the context. When processes are industrialized, quality is controlled and constant, and the flexible organization that results makes it possible for the enterprise to react appropriately to peaks in their workload. At any moment, an expert can be called in on a one-off basis to boost specific expertise in the community: this brings the whole of the Bull group's power within the reach of the project, along with its entire business and technological experience. Beyond this, capitalizing on development projects, tools and practices so they can subsequently be re-used optimizes the investment as a whole. Finally, for maximum proximity, transparency is total. With access to the forge, the customer itself becomes an essential member of the team. Acting on behalf of their project, they themselves can ensure that Virtual Shore, above all, is translating into tangible results.



NovaForge: the development tool at the heart of Virtual Shore

For Virtual Shore and collaborative development to really deliver all the expected benefits, adequate provision of tools is essential in both areas. Thanks to its experience of Open Source projects and its long-standing use of distributed development as part of its R&D programs, Bull has been able to identify best practices in this area and select the most powerful development tools to create an innovative new platform: NovaForge.



Industrializing development projects

This collaborative software development 'factory' brings together a suite of innovative and complementary services and tools to professionalize and automate software development projects. It combines all the 'workbenches' that will be used during the project life cycle, in a single environment. The platform is structured around five major areas: the repository, which holds all the re-useable items including components, tools, practices and procedures; a secure collaborative portal for project management and for handling associated documents; a development workbench (based on Eclipse IDE and the UML model); a testing and integration structure, including high-level Open Source tools to enhance production quality; and finally, a project control module that uses a range of indicators to provide a shared vision of the project's current status in terms of quality, resources and costs.



A global and integrated approach

This global and integrated approach overcomes certain weaknesses associated with traditional projects. In effect, it encourages users to capitalize on existing developments, and focuses on the management of requirements, communication and information-sharing as well as on flexibility thanks to the modularity, scalability and openness of the tools around which it is built. By resourcing the project in this way, from end to end, and in a professional and automated way, NovaForge can reduce the development workload, optimize timescales and improve the quality of deliverables; in the process making it easier for everyone involved to 'buy in' to the project, and reducing the attendant risks. NovaForge is already deployed by Bull in its service centers to support their development, application renewal, third-party application maintenance and application qualification work, in the environments that have been entrusted to them. Bull's customers can also integrate NovaForge in their own organization, either in hosted mode, or installed at their own site.

Bull's service center network in the age of collaborative development

The principles behind Virtual Shore and collaborative development are now being applied every day in Bull's service centers, to the greater benefit of its customers. Bull has an international network of these centers based in France (Paris, Bordeaux, Grenoble, Marseille, Sophia Antipolis), Brazil, China, Spain, Morocco and Poland. The larger centers each employ several hundred staff. Run as industrial production units, each center cultivates a pool of specific skills, both in vital technological and business areas. Sao Paulo and Casablanca host experts in issues concerning telecoms operators, and Sophia Antipolis specializes in local authorities. Lodz is an important center for Web technologies, Bordeaux for mobile computing, and in the Paris, Marseille, Grenoble and Beijing centers you will find specialists in Open Source.

The best team for each project

These centers are all interconnected and organized as a truly integrated network so the strengths of each center are effectively multiplied. When Bull is approached by a customer, the project leader can mobilize the appropriate resources wherever these are to be found, firstly to formulate and evaluate an initial proposal or response, and

then to provide the development resource or offer one-off expertise wherever it is needed. By facilitating these exchanges, NovaForge, Bull's collaborative development platform, brings Virtual Shore into its own. The project manager assembles the most suitable team and brings together contributions from each member of the group. This way of operating provides an assurance to the customer that the best competences will be deployed for their benefit, and offers the customer guarantees and visibility when it comes to quality, costs and timescales. What's more, it provides an assurance of close proximity, an essential factor for the success of complex projects.

A pool of skills

This innovative way of organizing projects is also a real advantage when it comes to human resources. Avoiding the problem of skills being too widely dispersed, it gives each employee the opportunity to get involved in the most interesting projects available, and to make constant progress in their chosen area of expertise. Finally, at a time when there is stiff competition to attract the best talent, the service centers are supporting Bull's recruitment drive. Not only are collaborative methods proving attractive to recent graduates, but the possibility they offer of being able to participate in major projects is a real 'plus'. So the network forms a pool of motivated and highly qualified resources, and this, of course, is an additional benefit for Bull's customers.



