Laboratórios de Desenvolvimento de Software - LEI

Application Lifecycle Management

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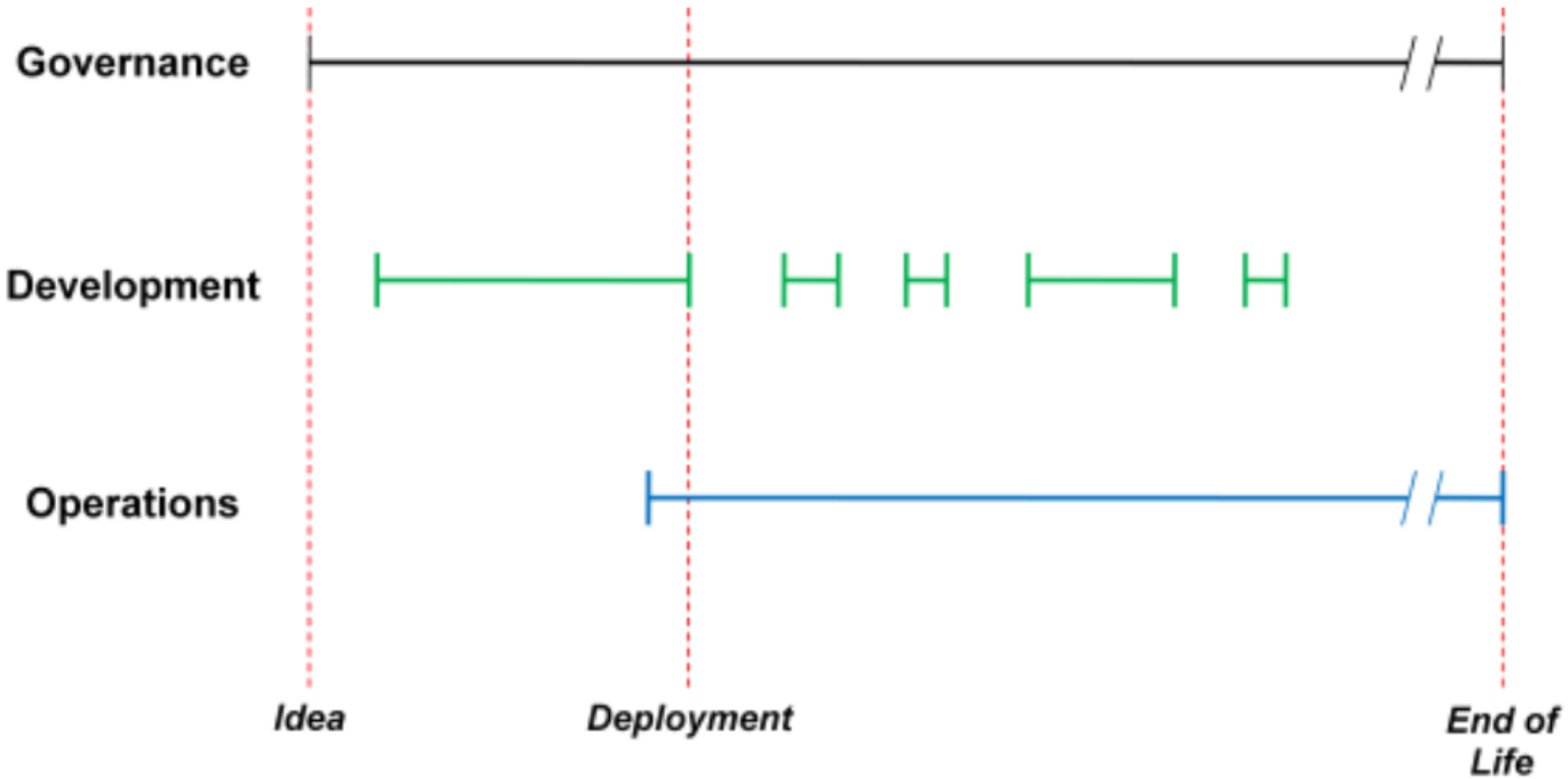
Application Lifecycle Management

- A large portion of IT projects fail, overrun in terms of cost or time, or do not deliver business value;
- Companies state that one of the main issues is the communication between the *business* side and the *IT* side;
  - Studies show that more than half the budget is spent in operations and maintenance rather than development;
- *Application Lifecycle Management* (ALM) deals with these issues.

Application Lifecycle Management

- ALM is broader than developing the application;
- It comprises the conception, creation, deployment and eventual retirement of the application;
- *Software development lifecycle* (SDLF) is but one component;
- Can usually be seen under three perspectives:
  - Governance;
  - Development;
  - Operations.

Application Lifecycle Management

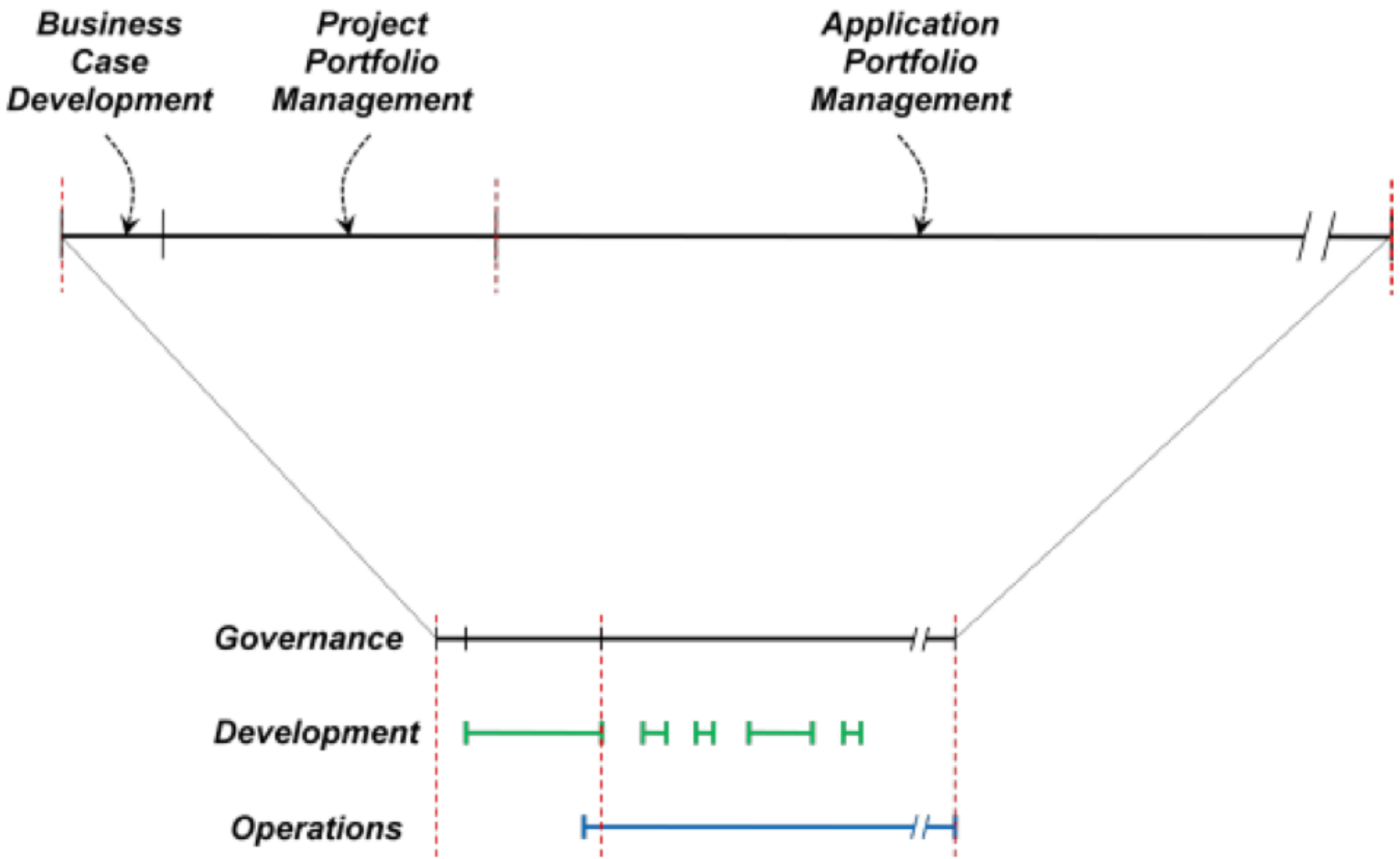


Chappell, D., "What is Application Lifecycle Management?". White Paper, 2008.

Governance

- Focuses on the business needs of the application;
- Application is seen as an asset;
- Starts of with an idea and a business plan...
- ...and ends when an application is retired.

Governance



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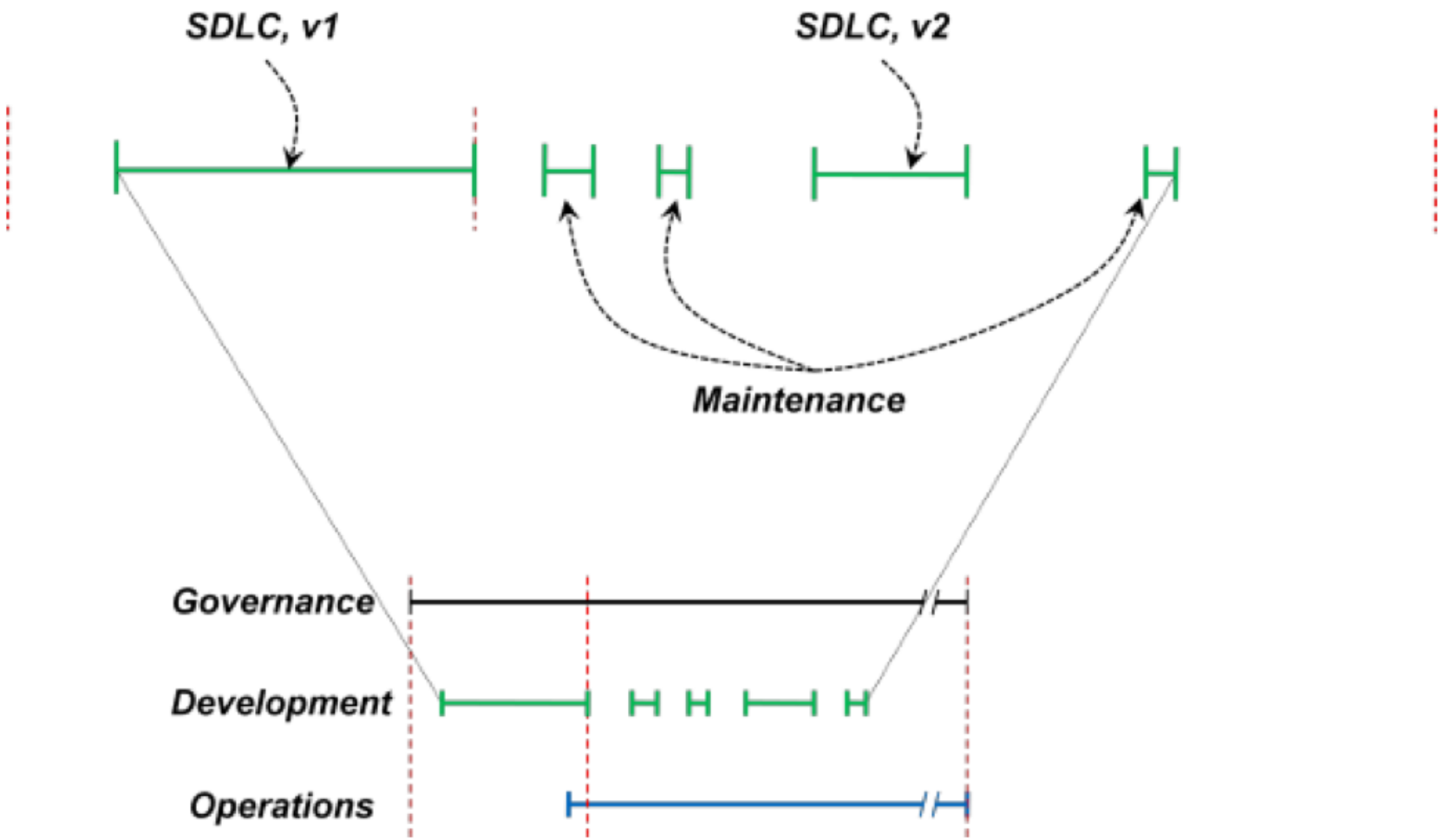
Development

- Is concerned with the actual development of the application;
- Does not end once the product is deployed;
  - In most companies the post-deployment development cost is actually higher;
- It is usually a periodic process, as the application is updated and improved;
  - Requirements are not static;

Development

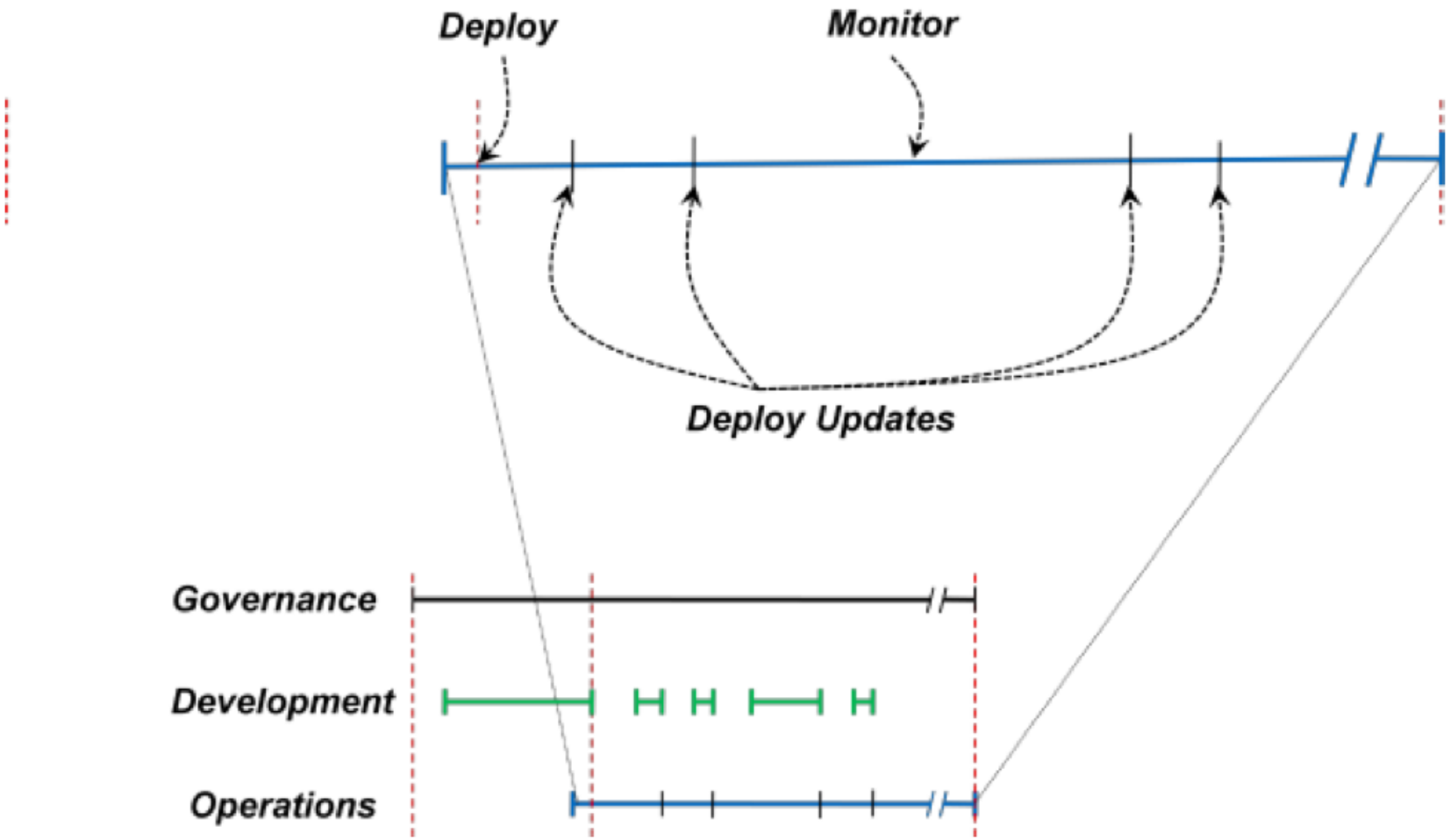


Chappell, D., "What is Application Lifecycle Management?". White Paper, 2008.

Operations

- Guarantees that the application delivers the expected business value;
- Focuses on activities related with deployment, operations and support;
- Starts by preparing the deployment;
- Handles bug fixes and change requests;
    - Triggers new development phases.

Operations



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ALM Challenges

- Typical ALM challenges:
  - Tool integration;
  - Geographically spread team;
  - Different team roles;
  - Lack of process;
  - Communication problems.

Tool Support

- Tool support plays an essential role in ALM;
- They should connect the different layers;
- And improve process automation.

Visual Studio ALM

- *Visual Studio* has a long history as a *rapid-application development* tool;
- However, its support for team and project management was limited;
- Users had to resort to third-party tools;
- *Visual Studio Team System* was introduced in Visual Studio 2005 to tackle these issues;
  - Was later renamed to *Visual Studio ALM*.

Visual Studio ALM

- Innovated by wrapping different ALM components under the same framework;
- However, they are still independent and may be connected to third-party applications;
  - Recognizes that different team members may relay on different external tools;
- It is no longer focused on developers, but rather an end-to-end application.

VS ALM Components

- Visual Studio
- Visual Studio Test Professional
- Team Foundation Server
- Visual Studio Lab Management

Team Foundation Server

- Focuses on collaboration;
- Support for:
  - Project management;
  - Source control;
  - Data collection;
  - Reporting.

Visual Studio

- Visual Studio is a Integrated Development Environment (IDE) to develop applications over the .NET framework;
- It is oriented to rapid-application development;
  - Multi-layer integration;
  - Class designer;
  - Code window forms by "drag-and-drop";
  - Code generation;
  - Object-relational mapping;
  - *IntelliSense*;
  - ...

Visual Studio

- Support for all .NET components;
- In particular, languages built over the .NET CLR:
  - C#;
  - Visual Basic .NET;
  - Visual C++;
  - F#;
  - ...