Open-Sourcing a Major Commercial Technology

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also known as
How to dump 2.300.000 lines of “industrial strength” code onto undergrad students
(a lessons learned session)

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Overview

1. What is EiffelStudio?
2. Why did we open source it?
3. How did we open source it?
4. What can we learn?
Eiffel

- Object-Oriented Programming Language
  - 1986: First compiler
  - 1991: Full language definition
  - 2005: ECMA 367
  - 2006: ISO 25436
- Bondage and discipline
- Design by Contract
Industrial applications

- **Axa Rosenberg:** Investment manager managing more than US$40 billion, 2m LoC
- **Chicago Board of Trade:** Eiffel + Solaris + Windows + CORBA + ...
- **Boeing:** Large scale simulations
- **Swedish social security:** Accident reporting and management
EiffelStudio

- Developed by Eiffel Software, Santa Barbara
- Compiler for Eiffel language
- Modern IDE
- Graphical UML editor with full round-trip engineering
- Refactoring support
- Highly portable:
  - Windows (32 and 64 bit)
  - Linux (32 and 64 bit)
  - FreeBSD
  - Solaris
  - Mac OS X
  - VMS
  - Embedded devices
  - FreeBSD
  - Solaris
EiffelStudio
EiffelStudio facts

- **Apache**
  - 35 MB
  - 0.3 m LoC
- **EiffelStudio**
  - 115 MB
  - 2.3 m LoC
- **OpenOffice**
  - 400 MB
  - 7.5 m LoC
Open Sourcing EiffelStudio

April 5th, 2006

http://origo.ethz.ch/unlock-eiffel/
In the media

• Mentions on
  – Slashdot
  – Heise
  – Symlink.ch
  – Standard.at (!)
  – And many others
...and the Slashdot effect...

- 95 GB of transferred data on release day
- 100,000 Visitors on the project website
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Why?

Eiffel is the best thing since the invention of sliced bread.

(our modest and subjective opinion)
Why?

- Compilers are the first technology where open source has become the standard. (Cambridge Technology Partners, 2006)

- Any programming language needs a critical mass. How?
  - ECMA / ISO standardization
  - Teaching Eiffel
    (ETH mandatory first year course, new textbook under development)
  - Open sourcing the technology
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Inverted Curriculum

- Good bye “Hello World”

- Large code base that is discovered “piece by piece”
  - Traffic (traffic simulation) 100,000 LoC
  - EiffelMedia (multimedia library) 500,000 LoC
Teaching Software Engineering
EiffelMedia

- 500,000 LOC
- 1,350 Classes
- 12,000 CVS Revisions
- 2,000 Messages
- 30 People
- 2 Years
- More than 150 Client Apps
EiffelMedia matured over time...

- X Adventure Engine (1 year ago)
EiffelMedia matured over time...

- Antworld (this year's best game)
The development process in the inverted curriculum
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How to host this process?

- Servers
- Configuration management
- Communication
- Presentation
The Origo Platform
What Origo is

- A platform for distributed software development
- A model for integrating components
What Origo is not

- A project management tool
- A build server, configuration management repository etc.
Integration

Component Model (CbC)
- Info Manager
- Platform Manager
- Security Manager

API

- Portal
- Build
- Config. Mgmt.
- Bug-tracker
- Mirrors
What is the added value of Origo?

- Technology independent
- Integrated into any process (API)
- Secure
- Extensible
Coming back to EiffelStudio

- Project Start: April 5th
- Student Projects:
  - Folding editor support
  - Carbon port of GUI toolkit
  - Internationalization
  - Stripped down version for teaching
  - ...
- Common development tree for all projects
Which license?

- Continued commercial support
- Closed source development should use paid version
- Free for open source development
- No new open source license
Extending EiffelStudio

contributing

using

extending

generalizing
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Hazards ahead

Lessons learned the hard way
Lesson Learned (Part I)

Make sure it is easy to build your stuff (alone, at home)
Lesson Learned (Part II)

Fear regressions

Example:
  do not change
  build file format
Lesson Learned (Part III)

Have a development plan (and publish it)
Lesson Learned (Part IV)

Eat your own dogfood
If you are interested

- EiffelStudio
  - http://eiffelsoftware.origo.ethz.ch
  - http://www.eiffel.com

- Games
  - http://games.ethz.ch

- All other open source libraries
  - http://se.ethz.ch