Smalltalk – Past, Present, and Future

Georg Heeg

Founder and Owner of Georg Heeg eK
Executive Director of STIC – Smalltalk Industry Council
Cincom Partner since 1999
iPad

Our most advanced technology in a magical and revolutionary device at an unbelievable price.
Far better at some key things
Georg Heeg (Person)

- University of Dortmund
  - Studied Computer Science and Maths
  - Worked as Teaching Assistant
- Learned Simula 67 in 1973
- Tought Simula 67 up to 1983
- Did not understand what Objects are
- Learned Smalltalk in 1983
- Understood what Objects are
Georg Heeg eK

- Founded 7/7/1987 in Dortmund
  - Original Mission
    - Spread Smalltalk in Central Europe
- Georg Heeg AG Zurich
  - To service the Swiss market
- Subsidiary in Köthen (Anhalt)
  - To keep family Heeg together
- Premiere Cincom Smalltalk Partner
  - Throughout Europe and Worldwide
Our Team

• 14 Smalltalkers
  – with 4 to 25 years of Smalltalk experience
  – 6 certified Scrum Masters
    • Project managers of agile projects
  – 9 Smalltalkers in Dortmund
  – 5 Smalltalkers in Köthen

• 2 Web Designers
  – in Köthen
Cairo Feasibility Study

- On behalf of Cincom
- Replacement of all VisualWorks graphic primitives by Cairo
- Result
  - Prototype with complete implementation
  - Windows, Mac OS X, Linux
- 2009
Cairo on Linux

Standard VisualWorks

VisualWorks with Cairo

To use Cairo for drawing run the following:
CairoCompatibility CairoSetup new installCairo
To use the old primitives for drawing run the following:
CairoCompatibility CairoSetup new unInstallCairo

To test if Cairo works execute:
CairoCompatibility CairoSetup new canCairoWork
STIC Purposes (from the Bylaws)

A. To create and increase awareness of Smalltalk.
B. To promote Smalltalk as the superior technology for the construction of information systems.
C. To help attract skilled, productive human resources to the Smalltalk industry.
D. To support the creation of industry standards.
STIC Industry Members

• Board Members
  – Cincom Systems
  – Instantiations
  – GemStone

• Executive Director
  – Georg Heeg
Smalltalk

- Past
- Present
- Future
August 1978: First time Smalltalk is mentioned.
Carl Helmers

- Traveling upward (in the picture) through heavy seas we come to the pinnacle, a snow white island rising like an ivory tower out of the surrounding shark infested waters. Here we find the fantastic kingdom of Smalltalk, where great and magical things happen. (Byte Magazine Aug 1978, p. 18)
What Happened

- 1976 objects were created which still exist in today’s Smalltalk systems.
- 1981 Byte Magazine published a series of 11 Smalltalk articles
  - With Z80 assembly code manually translated from Basic
The Smalltalk Bible

- 1983: The Book
- Version 2 of “The Smalltalk 80 System”
  - Distributed without virtual machine to Universities ($100)
Commercialization

- 1968 Tom Nies founded Cincom
- 1982 Servio Logic Corp. (now GemStone Inc.)
- 1983 Digitalk
- 1984 Tektronix 4404
- 1987 Georg Heeg eK
- 1988 ParcPlace Systems
- 1991 Enfin Corporation
- 1994 IBM VisualAge
- ...
- Smalltalk/X
- Dolphin
- ...
1990-1995 “Smalltalk Hype I”

• Many many successful projects are started throughout the industry
  – Banks
  – Insurance
  – Car manufacturing
  – Chip manufacturing
  – Railways

• Mostly (very) complex systems
1996-2002 “Slow down”

• Java pops up
• Java Promise:
  – Smalltalk-like magical things without craggy aloofness
• In the same time frame
  – Smalltalk projects are successfully deployed
1999-... “Migrations failures”

- Smalltalk customers believe the Java hype and try to migrate
- And fail
- And Consider Smalltalk “strategic again”
Cincom Invests into Smalltalk

- November 5, 1996
  - “Vmark turns ObjectStudio over to CinMark Inc., jointly owned by Vmark and Cincom.”
- February 10, 1997
  - “Cincom Systems Inc. today announced they have acquired ObjectStudio's German operations from VMARK”
- August 31, 1999
  - “Cincom Systems, Inc. today announced that it has acquired the VisualWorks(TM) product line along with the transfer of related engineering, sales and support teams from ObjectShare, Inc. “
2002-2009 “Second Spring”

• New customers adopt Smalltalk
  – Small (one person enthusiasts) and
  – Big corporations detect Smalltalk as solution for stagnating projects
Smalltalk

- Past
- **Present**
- Future
We provide software to simplify and improve business operations and customer communications.

Cincom enterprise technologies include contact center software, document automation software, manufacturing software, product configuration software, healthcare software, database management software and application development software. Each software solution is rigorously designed for simplicity, ease of use and flexibility. Rapid implementation means you get value from our solutions faster, with less cost and risk.
IT'S HERE: The NEW releases of ObjectStudio 8.2 and VisualWorks 7.7

Products: WebVelocity

WebVelocity is the best tool for building dynamic web applications with the ability to automatically use your existing database or by creating a new one. We integrate SQL databases, javascript, and a browser-based development environment into one incredibly productive toolset.

Learn More
- Product Overview
- Download it and try it for yourself
- Learn how to buy
- See our Road Map and find out where WebVelocity is headed next

WebVelocity Resources
- WebVelocity Introduction Tutorial (mp4)
- WebVelocity Basics Tutorial (mp4)
- Adding AJAX Tutorial (mp4)
- Additional WebVelocity Tutorials

HELP! Where’s My Page?

As you can tell, our site has undergone some renovations. If you cannot find the page you are looking for during this transition, please email us at wheresmypage@cincom.com.

Smalltalk Daily
- Smalltalk Daily 03/02/10: Starting Another Image
- Smalltalk Daily 03/01/10: Tracing Network Calls
- Smalltalk Daily 02/25/10: UI Tools and Packages
- Smalltalk Daily 02/25/10: Exporting Code in a Portable Fashion
- Smalltalk Daily 02/24/10: How to Report a Bug
- Smalltalk Daily 02/23/10: ExtraActivity

Industry Misinterpretations
GemStone® is the state-of-the-art platform for developing, deploying and managing scalable, high-performance, multi-tier applications based on business objects.

GemStone® provides the flexible distribution of processing, security, and robustness your enterprise needs for a business-critical, run-time environment. GemStone® supports high-availability online environments that demand 24x7 operation. For more than a decade, customers in finance, insurance, transportation, telecommunications, and utilities have used GemStone® to host core business applications.

GemStone® is based on Smalltalk—a mature, industry-standard language. Developers who have written Smalltalk applications and who work with Smalltalk clients will find it easy to build applications in GemStone®. GemStone® uses the same object model as Smalltalk, enabling seamless integration with your existing Smalltalk applications.
New GemStone Product

Seaside under GLASS
GemStone • Linux • Apache • Seaside • Smalltalk

What is GLASS?

GLASS — GemStone, Linux, Apache, Seaside, and Smalltalk — provides a powerful new way to rapidly create and deploy desktop-like web applications. GLASS makes GemStone's transparent persistence, enterprise scalability, and legendary reliability available to web application developers. By using GLASS, you can focus on developing your application, and not spend any time on complex Object-Relational mapping or other persistence schemes. For more details, visit Dale's or James' blog.

A public Beta of GLASS is available on our download page.

What is the GLASS Virtual Appliance?

It is pre-built, ready-to-run, 64-bit VMware virtual appliance configured to start GemStone, Seaside, Apache, and Firefox when it is booted.

It includes GemStone/S 2.3 and Seaside 2.8 running on Xubuntu Linux 7.10. It includes a Squeak image and VM you can use to develop Seaside applications. You may use it at no charge to develop, deploy, and distribute GemStone/Seaside applications, as long as you abide by the terms of the License and the restrictions imposed by the included keyfile.

It requires a 64-bit X86-based Macintosh, Windows or Linux computer with VMware installed. It will even work on 32-bit Windows XP, as long as the underlying hardware will run a 64-bit guest OS. See VMware's Hardware and Firmware Requirements for 64-bit Guest Operating Systems or Intel's list of Core Duo Processors. According to AMD, all 64-bit AMD processors that use DDR2 memory except Sempron™ should work.

About GemStone/S

GemStone/S combines an enterprise class application server, a robust object database, and a multi-user Smalltalk virtual machine. With the addition of the open source Seaside...
Smalltalk Products Home

Instaniations is dedicated to providing the industry's most powerful and commercially viable Smalltalk development environment with VA Smalltalk. VA Smalltalk enables software engineers to quickly construct high quality software applications that are portable, high-performance, scalable, and simple to maintain. VA Smalltalk is a modern, high-productivity software development environment that is 100% IBM VisualAge® Smalltalk compatible.

VA Smalltalk

the successor to VisualAge Smalltalk from IBM

VA Smalltalk includes:
- Support for Windows 7, SuSE Linux, and Oracle 10
- Support for Seaside
- Easy transition from VisualAge Smalltalk 6.0.3
- Award-winning VA Asset™ technology and popular WIDGETKit technology.
- Refactoring browser
- SLUnit and SLUnit Browser for testing
- ENVYQA to reduce defects

Proven Power and Productivity
VA Smalltalk allows for incremental and rapid development of applications that...
- use object-oriented technology
- are highly portable
- are scalable and multi-tier

POWERFUL ADD-ONS
to your VA Smalltalk environment

WindowBuilder Pro for Smalltalk
- the most powerful GUI builder available in any language
-Lets you interactively place and edit controls for the user interface of your VA Smalltalk applications
- Build your applications interactively
- Experiment freely and easily tune the UI

WidgetKit/Business Graphics
- charts & graphs for WindowBuilderPro or VA Composition Editor
- A library of graphic components:
  - with 50 standard chart types, and 21 3D chart types
  - with printing and metafile support
  - that are portable between Windows and OSG

WidgetKit/Professional
- add powerful spreadsheets, tables, etc. to your applications
Did you know?

Intent to Change License for Squeak 4.0

The Squeak Oversight Board plans to finalize the multi-year effort of re-licensing Squeak. Squeak 4.0 is scheduled to be released on Monday, March 13th, 2010 and will be licensed under the MIT License with some original parts remaining under the Apache License. This release will be functionally equivalent to the previous 3.10.2 release. Current development work will be released as 4.1 as soon as possible following the release of 4.0.

This notice is intended as a "last call" before the actual license change takes effect. We have assembled re-licensing agreements from every identifiable contributor. However, if you have contributed to Squeak or know of someone who has contributed and has not been contacted about the re-licensing effort, this notice is intended to make you aware of the upcoming change and to allow you to contact the Squeak Oversight Board regarding your contributions before the license change takes place.

Please distribute this notice widely. Questions or comments should be sent to relicensing@squeak.org.

The Squeak Oversight Board

Also:
- The Squeak Oversight Board Election is coming up in early March. Check the squeak-dev mailing list for campaign information.

Squeak

Welcome to the World of Squeak!

Squeak is a modern, open source, full-featured implementation of the powerful Smalltalk programming language and environment. Squeak is highly-portable - even its virtual machine is written entirely in Smalltalk making it easy to debug, analyze, and change. Squeak is the vehicle for a wide range of projects from multimedia applications, educational platforms to commercial web application development.

Take Part in the Innovation

Discover Squeak's features.

Get Squeak by downloading it to your computer.

Learn the Smalltalk language.

Explore the documentation.

Join the community to find common interests.
Welcome to the home of Dolphin Smalltalk

And welcome to Object Arts.

It’s our belief that object programming with Smalltalk is an unparalleled programming experience and it’s for this reason that we created our Dolphin Smalltalk products.

However, Smalltalk is very different from the other programming languages out there. Not just in the language, not just in the environment, but in the whole way that “objects” are approached. If you’re not already familiar with Smalltalk and have a desire to find a better way, then Dolphin Smalltalk may be for you. And to help you get started we’ve produced a free, personal version of our product to give you as long as you need to get there. Downloading Dolphin Smalltalk may just change the way you develop your software, forever!

Important Announcement to all our Users

Please see our latest news release regarding a collaboration between Object Arts and Lesser Software to produce the next generation of Dolphin Smalltalk.

Andy Bower  Blair McGlashan
DNG Dolphin-Smalltalk Next Generation

Dolphin Next Generation (DNG) is a new Smalltalk which is based on the Dolphin Smalltalk Version 6 of Object-Arts and the LSWVST-VM - now named DNG-VM. DNG is now in pre-alpha state and we target the Alpha-State at end of May 2009. DNG round 0 which will be in final beta at the DNG event in Tarvisio, Italy September 2009 will be 99% compatible to the Dolphin 6 Smalltalk environment.

DNG round 0 is the start of a next Generation Smalltalk. It has already features not found in other Smalltalks and will used by our key customers to migrate their Smalltalk applications.

DNG will be available in several license flavours. We will have a try-before-buy, a personal and a company license.

DNG will also offer 2 services DNG-Portal and Dolphin-Bay.

The persons behind DNG are:

Andy Bower, the CEO of Object-Arts, creator of Dolphin & the MVP framework which is currently extended for a Web version.

Alejandro F. Reimondo, a known contributor to all flavours of Smalltalk (especially VSE). Alejandro is responsible for the DNG boot since March 2009. And he is also the visionaire about the features of the Next Generation of Smalltalk.

Frank Lesser is the developer of the DNG-VM.

To get access to the early DNG prealpha state you need to be a subscriber to the DNG-Portal service.

Workspace

Main shell for tools
Pharo Open Source Smalltalk - Home - Windows Internet Explorer

Pharo Open Source Smalltalk - Home

Mission

Pharo's goal is to deliver a clean, innovative, free open-source Smalltalk environment. By providing a stable and small core system, excellent developer tools, and maintained releases, Pharo is an attractive platform to build and deploy mission critical Smalltalk applications. Pharo is MIT licensed and is steered by a board of benevolent dictators. The board makes final decisions if no consensus can be reached within the community. Pharo fosters a healthy ecosystem of both private and commercial contributors who advance and maintain the core system and its external packages.

Pharo provides...

- a pure object-oriented language that runs on all major platforms
- a stable core system with unit tests
- a clean look and feel
- full block closures
- low memory footprint

Current status: 1.0 RC2
The framework for developing sophisticated web applications in Smalltalk

Seaside 2.8

Unit Tests

News

Seaside is a free and open source web application framework distributed under the MIT License.

Seaside is available on the following Smalltalk platforms:
- Pharo Smalltalk
- Delphi Smalltalk
- GemStone Smalltalk
- Squeak Smalltalk
- VA Smalltalk

Seaside-Book is now available in Print and as e-Book. 2010-03-06 16:52:00 -0600
This is the first in a series that a tutorial on Seaside will include specifics for VA Smalltalk, but unf...
Smalltalk

- Past
- Present
- Future
• “We have always defined our success by the success of our clients.”
• “I do believe in the power of Smalltalk!”
  – personal letter to me (June 16, 2009)
Far better at some key things
• Smalltalk is based on a small number of concepts, but defined by unusual terminology.

• These concepts are presented by defining the five words
  – Object
  – Message
  – Class
  – Instance
  – Method

• These five words are defined in terms of each other, so it is almost as though the reader must know everything before knowing anything.
  (Goldberg, Robson 1983)
Examples of Objects

- Collections
- Numbers
- Classes
- Methods
- Messages
- Processes
- Contexts
Objects

- You can create them
- You can manipulate them
- You can change them
- You can control them
- You can forget them

- You are in control of your system
Effective and joyful

• Smalltalk is “a vision of the ways different people might effectively and joyfully use computing power” (Goldberg Robson p. vii)

• Thus Smalltalk is an addiction
Object Oriented Modeling

Concept \(\rightarrow\) Class

1:1

Viewpoint of the Domain

Recognize, Define

Phenomenon

model

Object

Instance

“The World”
What is this?

- Wooden body in the form of a cylinder with approx. 20 cm (8 inch) height and 6 mm (1/4 inch) in diameter.
- In the center of the cylinder are a drilling of 1 mm and this are filled with pressed graphite.
- At end end the cylinder is conically tapered.

- The graphite can be transferred to other bodies by rubbing.
What Does Little John Care About?

DRAW
About Pencils and Ball Pens

• The object oriented (and Jonny’s) viewpoint:
  – Pencil = something, you can write and draw with
  – ball pen = something, you can write and draw with
What Does Little John Care About?
Somewhere in class Boy you want to write:

```
hand = Daddy.giveWagon();
...
((Wagon)hand).pull()
```

Then you have to change the pen example (check all occurrences of hand):

```
((Pen)hand).draw()
```
Smalltalk Example I

- Simple dynamic binding (small and large integer multiplication)
  - 10000 factorial

- Just type it in a workspace and print it
Smalltalk Example II

- A model for Lambda Calculus
  - f := [:n | n < 1 ifTrue: [1] ifFalse: [(f value: (n-1)) * n]].
  - f value: 10000

  - Just linarite the well known formula
  - Just the same as of the slide before
Smalltalk Example III

- How the home of Bach in Köthen was looked for
- Open Question since 1880
- Solved in 2008
- Using Modeling in Smalltalk
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## Haus

**Adresse:** Wallstraße 17 (Haus 10,301, 1819: 233)  → Google Maps  
**Hallisches Viertel**

### Tabelle

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Die Wohnhäuser Johann-Sebastian Bachs

• Johann Sebastian Bach wohnte zunächst in der Schalaunischen Straße 44 bei Krämer Johann Andreas Lautsch

• 1719 errichtete Lautsch in der Wallstraße 25/26 einen Neubau, in den Johann Sebastian Bach umzog.
Smalltalk Example IV

- The business man’s problem
- I’ve got confusing Excel spreadsheets
- I need expressive spreadsheets
Modeling

• **WebVelocity**
  - Smalltalk models the web interaction and the relational database in objects

• **seaBreeze**
  - Smalltalk models HTML in objects

• **ObjectStudio 8**
  - VisualWorks Smalltalk models ObjectStudio Smalltalk in objects
Obama's first year: Strong foundation or house of cards?

By Ed Henry, CNN Senior White House Correspondent

January 20, 2010 7:44 p.m. EST

Top campaign promises kept?

Introduction

Nonpartisan political Web site PolitiFact.com has found that out of 502 campaign promises made by Barack Obama, more than half have had enough progress to be rated in the works. Of the others, the site says, 91 have been fulfilled, 33 are considered a partial accuses, 97 have been stalled, and 16 have been broken.

Here are four of the key issues Obama discussed on the campaign trail and a look at where they stand.

NATIONAL SECURITY

1. Close Guantanamo

Obama had vowed to close the prison at Guantanamo Bay, but after running into resistance from Congress, he made it clear that he would find a way to close the prison. However, other developments related to Guantanamo have been put off.

2. Restore foreign policy

Obama promised to reset U.S. foreign policy. While he has made some headway, there have been international affairs that have been put off until he could focus on the economic recovery

3. Promote arms control

Obama has made the elimination of nuclear weapons a priority, but the Senate was slow in confirming his nominees. He has promised to negotiate a new arms control agreement. He has also been working to secure passage of the New START treaty.

4. Ice on the border

Obama promised to secure the border and end the illegal immigration.

ECONOMICS

5. Health care reform

Obama promised to pass health care reform.

6. Reduce the deficit

Obama promised to reduce the deficit.

7. Jobs

Obama promised to create 1 million jobs.

8. Paycheck protection

Obama promised to extend the payroll tax cut.

9. Financial reform

Obama promised to implement financial reforms.

10. Stimulus

Obama promised a stimulus package.

11. Small business

Obama promised to reduce regulations on small business.

GOVERNMENT REFORM

12. Ethics

Obama promised to reduce the influence of lobbyists.

13. Spending

Obama promised to reduce budget deficits.

14. Government waste

Obama promised to reduce government waste.

15. Senate reform

Obama promised Senate reform.

16. Ethics

Obama promised to reduce the influence of lobbyists.

17. Spending

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19. Senate reform

Obama promised Senate reform.

20. Ethics

Obama promised to reduce the influence of lobbyists.
Design for change
Chile quake might have shortened days on Earth

STORY HIGHLIGHTS
- Each day should be 1.26 microseconds shorter, according to preliminary calculations
- A large quake alters the distribution of mass on the planet
- Length of days was shorted by 6.8 microseconds after tsunami of 2004

(CNN) -- The massive earthquake that struck Chile last week might have shifted the Earth's axis and created shorter days, scientists at NASA say.

The change is negligible, but permanent. Each day should be 1.26 microseconds shorter, according to preliminary calculations. A microsecond is one-millionth of a second.

A large quake shifts massive amounts of rock and alters the distribution of mass on the planet.

When that distribution changes, it changes the rate at which the planet rotates. And the rotation rate determines the length of a day.

"Any worldly event that involves the movement of mass affects the Earth's rotation," Benjamin Fong Chao, of NASA's Goddard Space Flight Center in Greenbelt, Maryland, said while explaining the phenomenon in 2005.
"The Federal Reserve and other agencies have taken many steps to contain the ongoing financial crisis and limit its impact on the broader economy. It is critically important that we clearly communicate our actions to better ensure their success. This web site was created to provide the public with useful information about major financial events and policy actions, both over the past months and going forward."

St. Louis Fed President,
James Bullard
James Bullard’s Web Site
JPMorgan Chase reports first-quarter 2009 net income of $2.1 billion, or $0.40 per share

Apr 16, 2009

Press Release

New York, April 16, 2009 – JPMorgan Chase & Co. (NYSE: JPM) today reported first-quarter 2009 net income of $2.1 billion, compared with net income of $2.4 billion in the first quarter of 2008. Earnings per share were $0.40, compared with $0.67 in the first quarter of 2008.

View 1Q09 Earnings.
Where innovation and commitment exceed client expectations.

JPMorgan is proud to receive the Risk Derivatives House of the Year Award.

As global markets evolve, we seek to meet clients’ needs wherever they do business. We thank our clients for their enduring support and trust in our ability to provide the best in advice, expertise and service.
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J.P. Morgans Software

- KAPITAL
  - Computerworld Honors Program Award 2004
  - Derivate risk management calculation system of world class
  - Highly sophisticated object oriented design
    - fast modeling of each thinkable
    - Finance derivate model
    - increasingly competitive
    - Market reaction.
Profile in Success: JPMorgan

JPMorgan Derives Clear Benefits From Cincom Smalltalk™
ControlWORKS™ is a fully integrated, object-oriented development environment that enables applications to be fully portable in several hardware operating systems. Specifically designed to control process equipment, ControlWORKS minimizes the expense and time-to-market associated with developing control applications. Its open development framework allows users to concentrate on the unique behavior required by your tool. Instead of wasting valuable time creating software in-house, equipment OEMs are able to modify the ControlWORKS features, and offer a competitive advantage.

Over 11,000 ControlWORKS systems have been deployed in production since 1994. The product is continually enhanced to adhere to industry standards.

For more information about ControlWORKS Software, contact us.
Smalltalk is Far Better at some Key Things

- Smalltalk lets you model your virtual world
- Smalltalk frees you from technical burden
- Smalltalk technology is supported by strong vendors
- Smalltalk lets you work your way
- Smalltalk gets you in the controls of your computer
- Smalltalk lets you master your computer
Smalltalk Mobilizes
My Dream of the Future

- People understand more of the world
- People model their understanding of the world
- People utilize Smalltalk as the most expressive and most flexible way for modeling

- Smalltalk is one of the best technologies to improve the world
WE ALL LOVE SMALLTALK