



PROGRAM EXECUTIVE OFFICE FOR  
SIMULATION, TRAINING & INSTRUMENTATION

# Revolution of the Information Viewport

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<http://www.peostri.army.mil/CTO>

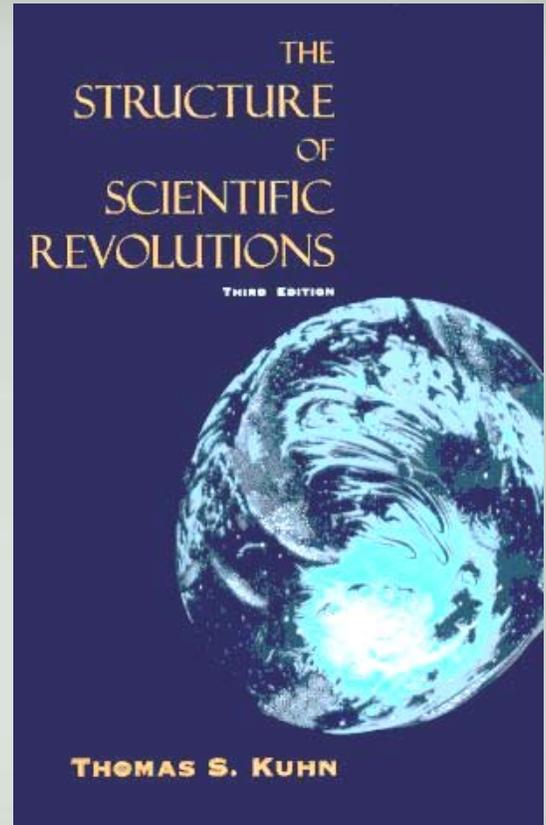
JADL Implementation Fest  
28 August 2008, Orlando, FL

## NOTES



# Scientific Progress

- Scientific Advancement = Revolution against established ideas
  - ❖ Newton vs. Einstein
  - ❖ Geo-centric vs. Helio-centric
- “a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.”
  - ❖ Max Planck



## NOTES

Scientific advancement occurs through a series of revolutions in which the previous paradigms of the world are overthrown by new theories

Newton vs. Einstein

Geo-centric vs. Helio-centric

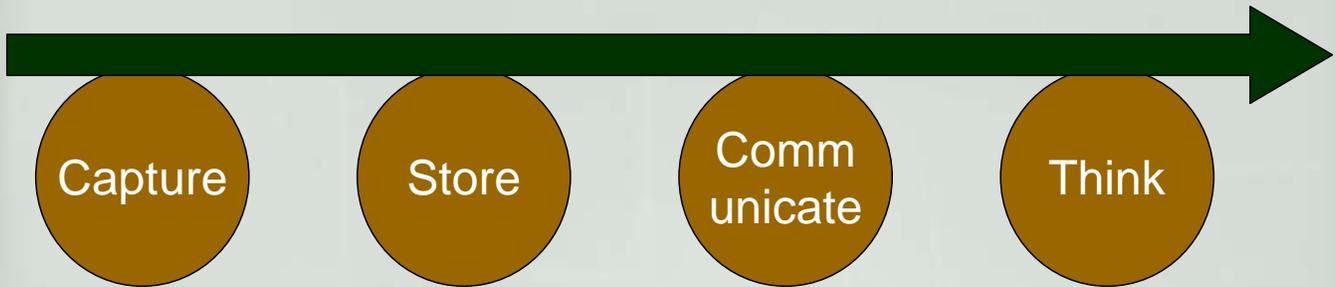
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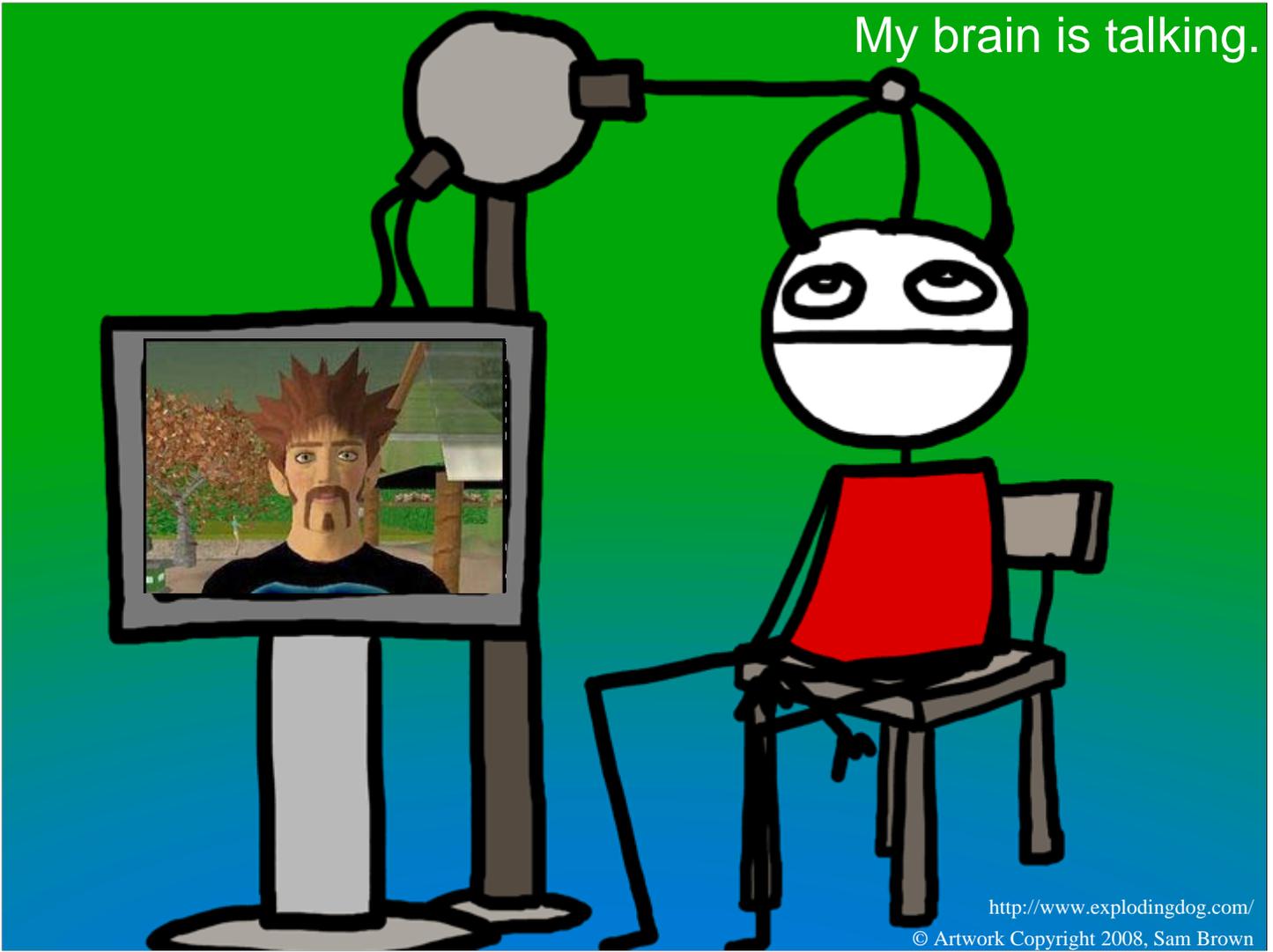


# The Information Viewport

How do we capture, store, communicate and think about information?



NOTES



## NOTES

My brain is talking. Can you understand what it is saying? The brain has been trying to communicate its message since the beginning of man.



## Moments frozen in stone



## NOTES

The hunter has a story to tell. He wants to explain how they worked as a team, the weapons they used, and the game they were after. The story is painted on the wall of a cave in France. He can bring anyone he wants to the cave to see the story. They did not have to be at the original event to see it. But the story is limited to the cave. Men must come to the story, the story cannot travel to them.

The Egyptians told their stories in hieroglyphics on their buildings. The stories were captured in great detail, but the story could not travel. Man had to travel to the story.



# Stories about self and society



## NOTES

The story moved to vases and artwork. It could be told with more color and more detail. It could be stylized to capture emotion, mood, setting. Details about dress, mannerisms, and surroundings could be added to the story. But the story was more portable. It could be carried to other people far away. Copies could be made and many people could have their own version of the story.

# Abstraction and Portability



## NOTES

Abstraction allowed the story to take on even more detail. The abstraction of alphabet allowed man to explain in even more detail than could be captured in a painting. The scroll and book made these stories even more portable. They could be carried safely anywhere in the world. The abstraction also made it easier to make copies. It was not limited to artists, but could be done by scribes.



# Literal reproduction and duplication

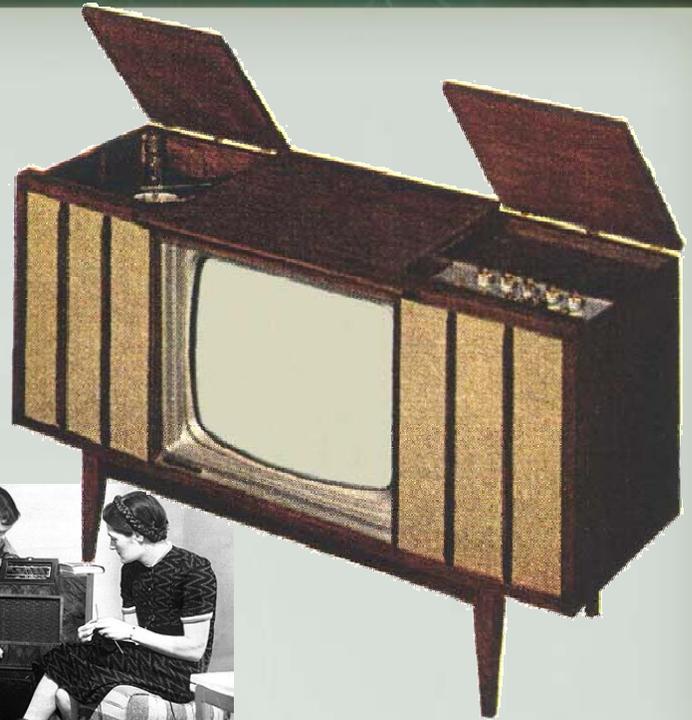


## NOTES

Audio and video recording allowed use to capture the story as it happens, to get the nuances from their original source.



# Mass dissemination



## NOTES

Radio, and television allowed these literal stories to be broadcast to a mass audience. People could hear and see the story from the comfort and convenience of their own homes. We created a shared body of information. Imagine that everyone in the country read the same pages from the same book on the same day, this is what the mass media does.

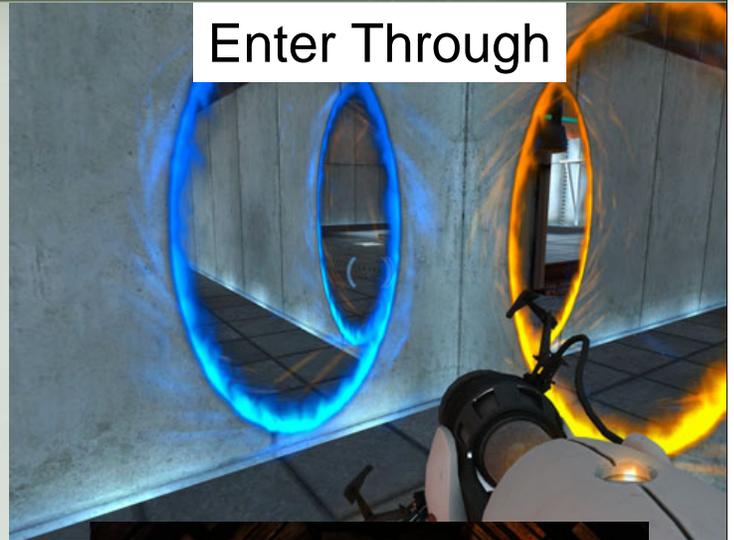


# Porthole vs. Portal

Look Through



Enter Through



## NOTES

We begin to move from a porthole through which we can see and hear information, to a portal that allows us to enter into the world of the information. We want to be one with the information of the world.



# Digital information in its primitive form

```

GET /asp30/05/header_refresh.asp
HTTP/1.1 200 OK
Server: Microsoft-IIS/5.0
Date: Sat, 01 Jul 2000 21:09:53 GMT
Refresh: 3
Connection: Keep-Alive
Content-Length: 79
Content-Type: text/html
Set-Cookie: ASPSESSIONIDQGGGYZC=KGGLDLCDDAELPOLCDJ
Cache-control: private

<b>Response.AddHeader "Refresh", "3" </b><hr color=CO
7/1/2000 5:09:53 PM

Connection to host lost.

Press any key to continue...

```

TELNET

```

150 Opening ASCII mode data connection for /bin/ls.
226 Transfer complete.
- 544 2003-02-04 16:29 2426 AssemblyInfo.cs
- 744 2003-02-05 13:17 3381 FtpAsyncResult.cs
- 544 2003-02-04 16:29 4093 FtpControl.cs
- 544 2003-02-04 16:29 2949 FtpData.cs
- 544 2003-02-04 16:29 4891 FtpEvents.cs
- 544 2003-02-04 16:29 7840 FtpException.cs
- 744 2003-02-05 18:51 8463 FtpMain.cs
- 744 2003-02-05 18:51 4960 FtpMisc.cs
- 744 2003-02-05 14:41 4776 FtpParse.cs
- 544 2003-02-04 16:29 10343 FtpProxy.cs
- 744 2003-02-05 15:12 11369 FtpStream.cs
- 744 2003-02-05 19:07 7680 FtpTest.exe
- 544 2003-02-04 16:29 19077 FtpWebRequest.cs
- 544 2003-02-04 16:29 3613 Item.cs
- 544 2003-02-04 16:29 7821 List.cs
- 544 2003-02-04 16:29 10170 ListParse.cs
- 544 2003-02-04 16:29 8573 ProxySocket.cs
- 544 2003-02-04 16:29 3257 Socks4.cs
- 544 2003-02-04 16:29 6338 Socks5.cs
- 744 2003-02-05 19:13 65024 rbxFtpLibrary.dll
ftp> chmod 755 rbxFtpLibrary.dll
200 CHMOD command successful.
ftp> pwd
257 "/home/lukasp/RebexFtp" is current directory.
ftp> disconnect
Disconnecting...
221-You have transferred 0 bytes in 0 files.
221-Total traffic for this session was 20770 bytes in 13 transfers.
221-Thank you for using the FTP service on karma

```

FTP

```

Mailbox is '/var/mail/root' with 2 messages

 1 Sep 17 Patrick J. Volkerd (174) Welcome to Linux (Stackware
0 2 Sep 17 (45) Register with the Linux count

You can use any of the following commands by pressing the first charac
d)delete or u)ndelete mail, m)ail a message, r)reply or f)orward mail,
To read a message, press <return>. j = move down, k = move up, ? = }

Command:

```

E-MAIL

```

West of House 0/0
ZORK I: The Great Underground Empire
Infocom interactive fiction - a fantasy
story
Copyright (c) 1981, 1982, 1983, 1984,
1985, 1986 Infocom, Inc.
All rights reserved.
ZORK is a registered trademark of
Infocom, Inc.
Release 52 / Serial number 871i25 /
Interpreter 8 Version J

West of House
You are standing in an open field west
of a white house, with a boarded front
door.
There is a small mailbox here.

>_

```

ZORK

## NOTES

The digital revolution began to create electronic versions of the information of the past. For a few years we lost the visual representations and fell back to text. But even with text we created programs like telnet, ftp, email, and zork that attempted to pull the person into the information.



# Visual form ... again

Tactical Iraqi



IEWTPT Tactical Questioning



AMBUSH!



Americas Army



Full Spectrum Warrior

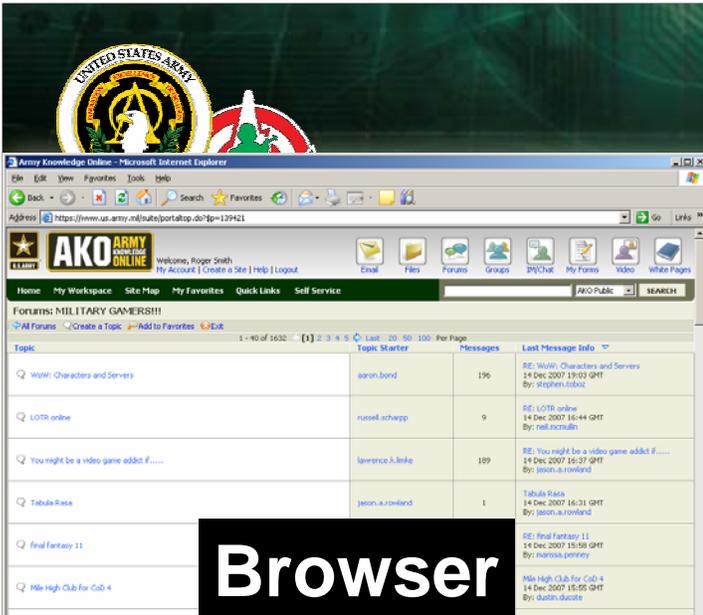


## NOTES

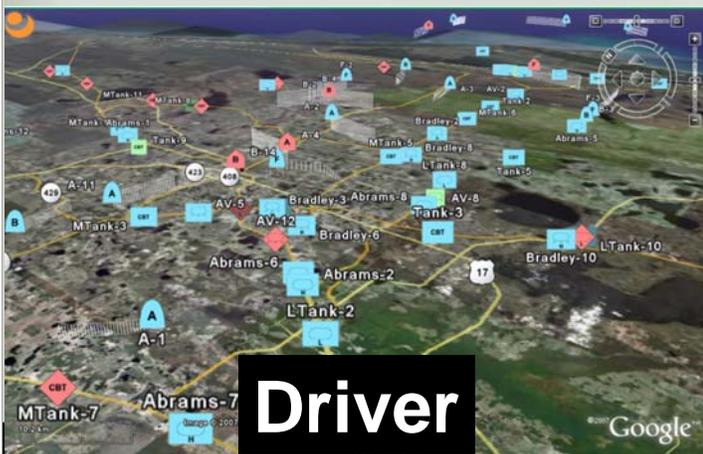
Computer games bring the visual back to the information. They allow information to look as good as artwork and television. They put the computer and the portal on a level footing with the television and the porthole.

<http://www.dodgamecommunity.com/index.php>

# Emerging portal options



**Browser**



**Driver**



**Full Game**

## NOTES

The desktop that most people experience is a little dated. “Serious business” requires email (Microsoft Outlook), web interfaces (Microsoft Internet Explorer) to server applications (Oracle ERP), productivity tools (Microsoft Office), and document sharing (Microsoft SharePoint). It has not evolved into 3D content or to allow the content that is unique to individual users.

We can deliver training to the desktop with a number of different viewpoints:

The Web Browser is a great universal tool for accessing HTML content.

A Plug-in can give the browser even more power to handle content that is 3D, interactive, and multi-player.

A Driver is a program that does not have content itself, but has the ability to load content on demand. Google Earth is such a driver and could be used as a simulation client.

Full Applications are those that bring their own software and data that is unique to the application, such as Americas Army or Ambush computer games.



# Digital, sensory, cognitive



## NOTES

Wikipedia: The Sensorama was a machine that is one of the earliest known examples of immersive, multi-sensory (now known as [multimodal](#)) technology. [Morton Heilig](#), who today would be thought of as a “multimedia” specialist, in the 1950s saw theater as an activity that could encompass all the senses in an effective manner, thus drawing the viewer into the onscreen activity. He dubbed it “Experience Theater”, and detailed his vision of multi-sensory theater in his 1955 paper entitled “The Cinema of the Future” (Robinett 1994). He built a prototype of his vision, dubbed the Sensorama, along with five short films to be displayed in it. Predating [digital](#) computing, the Sensorama was a [mechanical](#) device, which still functions today.

[Howard Rheingold](#) (in his 1992 book *Virtual Reality*) spoke of his trial of the Sensorama using a short film piece that detailed a bicycle ride through Brooklyn, created in the 1950s, and still seemed quite impressed by what it could do more than 40 years later. The Sensorama was able to display [stereoscopic 3D](#) images in a wide-angle view, provide body tilting, supply [stereo sound](#), and also had tracks for wind and [aromas](#) to be triggered during the film. Oddly enough in hindsight, Heilig was unable to obtain financial backing for his visions and [patents](#), and the Sensorama work was halted and today remains primarily a curiosity in the expansive lore of [Virtual Reality](#).

Now we are looking for VR and the Matrix so we can get into the information.



# Small Mobile Virtual Worlds



## NOTES

So why would we shrink the portal down to a cell phone? Because we want the information with us at all times. We want to be able to travel between worlds anywhere, anytime.

Posting on hosting WoW on a cell phone.

“Hey guys. (for now, just pics...but tutorial will come later)

I was waiting to post this for a long time, but never had time to compile a guide.

Anyways, I have finally done it. I installed world of Warcraft on my Sony Ericsson cell phone. Model is w810.

I am currently working to make it work on Motorolas (RAZR v3i and other motorolas and some Nokias.

To actually play it, you would need unlimited data package from your cell phone provider.

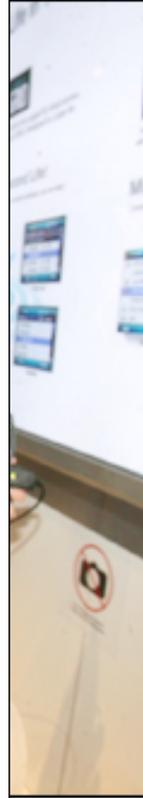
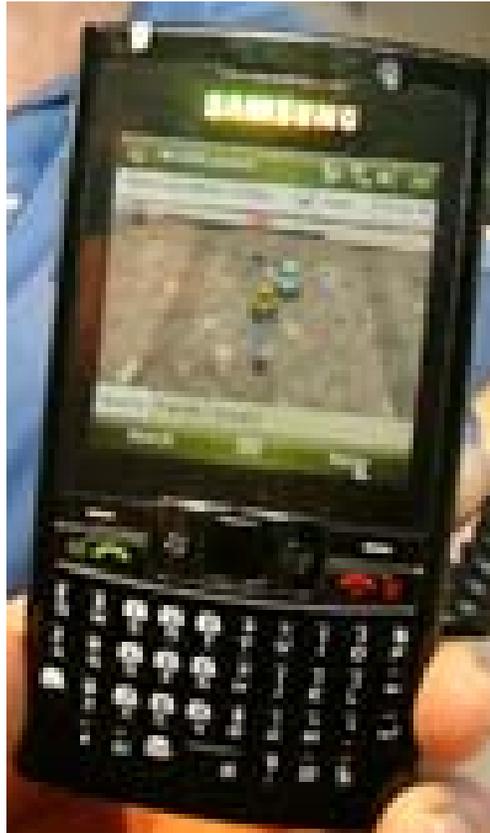
Otherwise the costs will be insane.

I cant post tutorial now due to not having a video camera, but once i find my webcam, i will record it and show you the tutorial.

[<http://edgeofnowhere.cc/viewtopic.php?t=328557&postdays=0&postorder=asc&start=0&sid=eaf3c626adc36591913d05a40e25c16c>]



# Are you a Virtual World nerd?



## NOTES

When you look at a picture like this and think – “Wow look at that cell phone program!” – you are a virtual world nerd.



# Revolution of the viewport



## NOTES

We want viewports everywhere we go. The viewport is evolving because we want to be in touch with our information all the time, we want to be part of the world's information all the time.

Where do we go from here?



© Artwork Copyright 2006, Sam Brown

<http://www.explodingdog.com/>

## NOTES

Where do we go from here? If a viewport gives you more information, more places, more often – then it will find its users.

Artwork: Sam Brown <http://www.explodingdog.com/>.

good night

NOTES

