

**Microsoft**



Microsoft® Research

# Faculty Summit 2012

Riviera Maya, Mexico | May 23-25 | In partnership with CONACYT



# Experiences in Software Engineering: Product Incubation Lessons



Derick Campbell  
Director of Engineering, Microsoft Research Connections

May 24, 2012

This presentation is available online:  
<http://docs.com/@derickc>



Christophe



Danny



Dean



Derick



Kal



Lori



Mike



Roman

# Agenda

## Intro

Me, You, Our Business

## Lessons

1. Express Capacity Meticulously
2. Throw Away Good Projects
3. Add Drama
4. Mandate Business Reviews
5. Open Source Prematurely
6. Partner Fanatically
7. Be the Edge
8. Capitalize on Risk



## Demos



# Who Is This Guy?



## Places of Work

Microsoft

Lucent Technologies

AT&T

Toronto Police Services

Crown Life Insurance

AdScan

The Unicorn Pub

The Bombshelter

Chuck E. Cheese

## Variety of Roles

Software Engineering Management

Program Management

Product Marketing

Consulting Management, Consulting

IT Management

Software Development, IT Architecture

Helpdesk Technician

Data Entry Clerk

Bouncer

Pizza Chef, Pizza Delivery Guy

Software Consulting

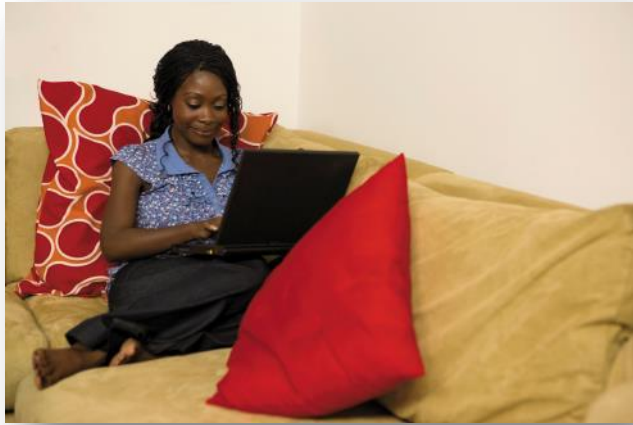
Cartoon Rat

Father.

Canadian.

Geek.

# Who This Talk Is For



Software Engineers  
Software Managers  
Students and Academics  
Startup Businesses



## Teams

Product Incubations  
Software Startups  
Software Labs  
Prototyping Teams  
Open Source Projects



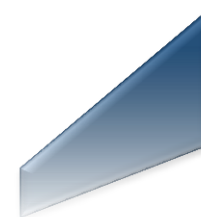
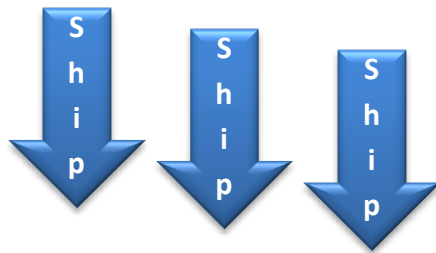
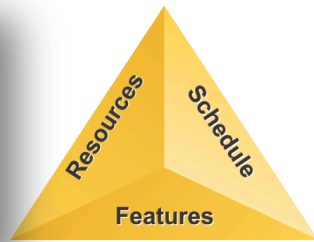
## Team Qualities

Usually small  
Future investments uncertain  
Big breakthroughs expected  
Projects may run in parallel  
Competition for resources



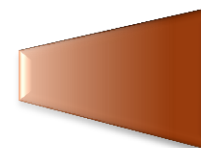
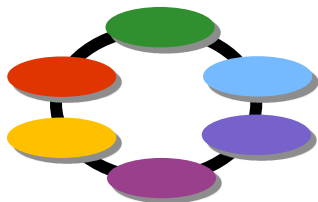
# Our Engineering Business

Deep software experience



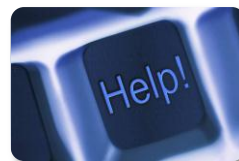
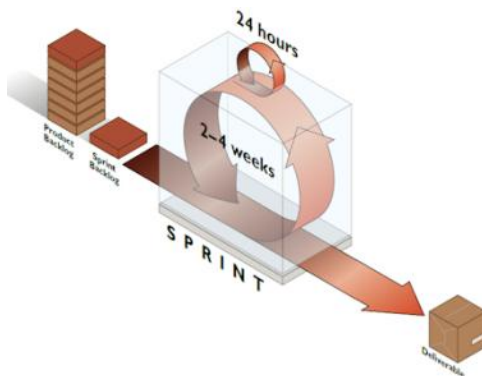
Enable the pursuit of scientific breakthroughs

Empowered teams of peers

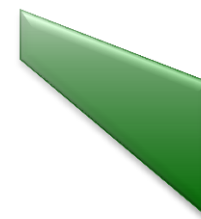


Accelerate scientific exploration with computing

Agile process, some rules



Forum-Based Community Support



Inspire emerging computer and research scientists

# Free Software Shipped: Highlights

Translator Hub

Layerscape

.NET Bio

Try F#

Millions of unique visitors

Hundreds of thousands of downloads

Dozens of schools and classes

# Layerscape demo

The screenshot shows the Layerscape website interface. At the top, the logo "Layerscape" is displayed, with the tagline "Powered by WorldWide Telescope" below it. To the right of the logo is a search bar and a button labeled "Install WorldWide Telescope" with a link to "System Requirements". Below the logo is a navigation menu with links for "Home", "Browse by", "Resources", "Help", "Publish", "Create Community", and "Sign In".

The main content area features a large heading "VISUALIZE. EXPLORE. DISCOVER." followed by a paragraph: "From the upper reaches of the atmosphere to Earth's core, Layerscape lets you seamlessly share and explore 3D visualizations of complex datasets via WorldWide Telescope." Below this is a list of capabilities: "With Layerscape, you can:" followed by three bullet points: "Discover and explore data-driven Tours", "Publish your own Tours, data, images, documents, videos, and more", and "Share and collaborate with other community members, either publicly or with select invitees." A video player is embedded on the right side of this section, showing a 3D visualization of Earth's atmosphere with a play button overlay. Below the video player is a paragraph: "Watch the introductory video for an overview of Layerscape's features or read more here. Then click 'Sign In' to begin exploring."

The bottom section of the page is divided into two columns: "Content" and "Community". The "Content" column has tabs for "Featured", "Latest", "Top Rated", and "Most Downloaded". It displays a featured item titled "seismicity Samoa and Tohoku" by Rob Fattand, categorized as "General Interest". The item includes tags for "seismicity, Tohoku, Samoa, Japan, model" and a rating of 4 stars. The "Community" column has tabs for "Featured", "Latest", and "Top Rated". It displays a featured community item titled "The Arizona Experience" affiliated with "The Arizona Experience", with a rating of 2 stars.





# Incubation Lessons Learned

Express Capacity  
Meticulously

Throw Away  
Good Projects

Add Drama

Mandate Business  
Reviews

Open Source  
Prematurely

Partner  
Fanatically

Be the Edge

Capitalize on  
Risk



# Express Capacity Meticulously

Be cautious about over-committing

## How

Ideal scope.

Ideal duration.

Budget parameters.



## Why

Expectations, risks.

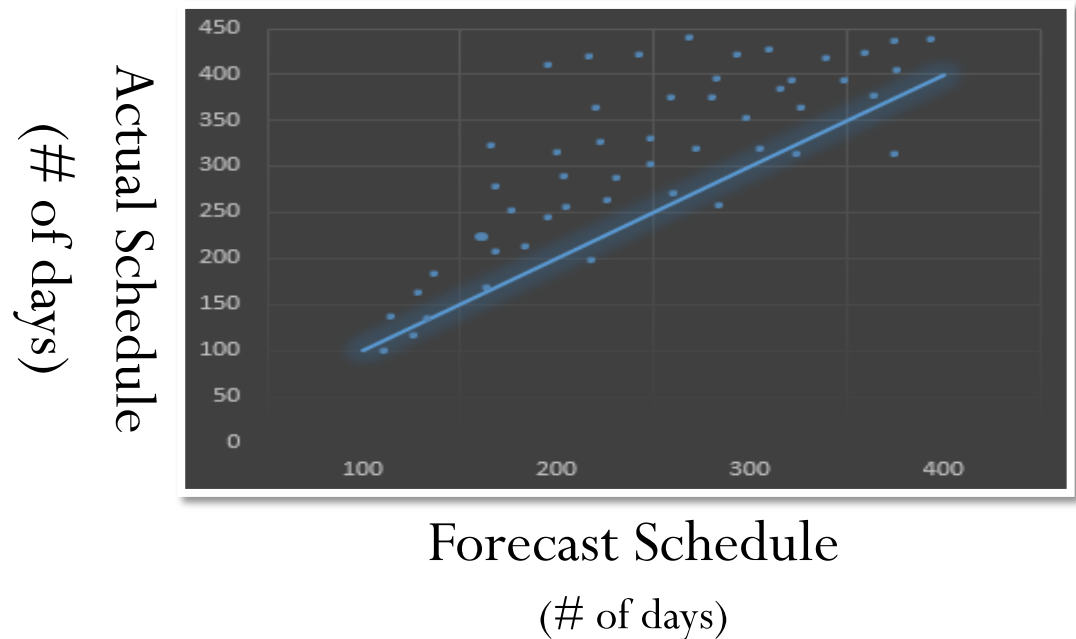
Leave room to aspire and amaze.

Focus!

## Keep in Mind

Pressure to do more.

“Nobody ships early”.





# Throw Away Good Projects

## Keep the Great Ones

### Selection

Ideas must be great!

(Of the best of available options)

A high bar sets the right tone.

Caution: high bars create anxiety and tension too!

Trust people to identify better projects over time.

### Sacrifice

Be prepared to de-invest in legacy projects that are holding the team back.

### Polish

Make something in each project shine.



# Translator Hub demo

Microsoft  
**Translator Hub**

[Log in using Windows Live ID](#)

Get started by requesting an invitation to build your translation system

[Request an invitation](#)

*Where language meets the world*  
Bridging languages, cultures and technology



**Microsoft Translator Hub is helping smaller languages thrive by putting the power to build machine translation systems in the hands of local communities.**

- K. David Harrison,  
National Geographic Fellow, author and linguist

## ABOUT MICROSOFT TRANSLATOR HUB

Microsoft Translator Hub empowers businesses and communities to build, improve, and deploy customized automatic language translation systems—bringing better and specialized translation quality to established languages, as well as the many native languages of the world that are not yet supported by major translation providers.

Powered by Windows Azure, Microsoft Translator Hub is an extension of the Microsoft Translator platform and service. You can build a superior translation system easily, within a private website, by combining your translated documents with the power of Microsoft Translator's big data back end. Once you are satisfied with your translation, you may share it publicly on the web.

## MORE INFORMATION

[Microsoft Translator Hub Overview](#)

[Microsoft Translator Hub Forum](#)



## VIDEOS



Get Started



Microsoft Translator Hub Case Study

# Add Drama

Drive Action with a Compelling Story



“This software does 4,000 amazing things!”

That people will never remember, and distract from the core message.

The Story Drives Action

Try the software.

Approve the project.

Provide funding!

Simplify The Story

Focus on primary audiences.

Make It Compelling

Audience validation.

Engineers On The Project

Are NOT the audience.



# Mandate Business Reviews

## More Value Than You First Expect

### Benefits

- Team morale and alignment
- Forward progress and evolution
- Commitment, recommitment
- Visibility and understanding
- Better team preparation
- Expectations management
- Annual performance reviews
- Getting help!



### Caution

- Remember who the decision makers are
- Schedule early to avoid conflicts
- Too many reviews can impede progress



# Open Source Prematurely

## Planning for an OSS Release is Critical



### Why

Shifting to OSS late introduces risk and offers diminishing returns.

Shifting off OSS is far easier.

### When

OSS is "Mission aligned".

### Consider

Governance and increased costs.

### Licensing

Remember: Developers are not lawyers!

### IP Management



**OUTERcurve**  
FOUNDATION

# Try F# demo

[About](#) / [Tutorials](#) / [Tools & Resources](#) / [What Experts Say](#) / [Feedback](#)



F# is ideal for data-rich, concurrent and algorithmic development: "simple code to solve complex problems". F# is a simple and pragmatic programming language combining functional, object-oriented and scripting programming, and supports cross-platform environments including PC, Mac, and Linux.

We'll provide the tutorials, resources and tools you'll need to begin working with F# right away.

## Begin Learning with F#

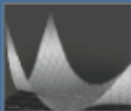
In just a few minutes you can begin learning F# - no registration, log-ins or forms are required. Once you hit "Begin", we'll download the F# compiler (browser edition) and you can start coding immediately.

We'll also run a quick check of your system - if any additional tools or updates are required we'll provide the links.

begin ▶

## About F#

See examples.  
Review advantages.  
Learn more.



## “Say What?”

Read what the experts have to say about F#

## Teaching F#?

Find the tools and resources to teach F# here.

## Tell Me More...

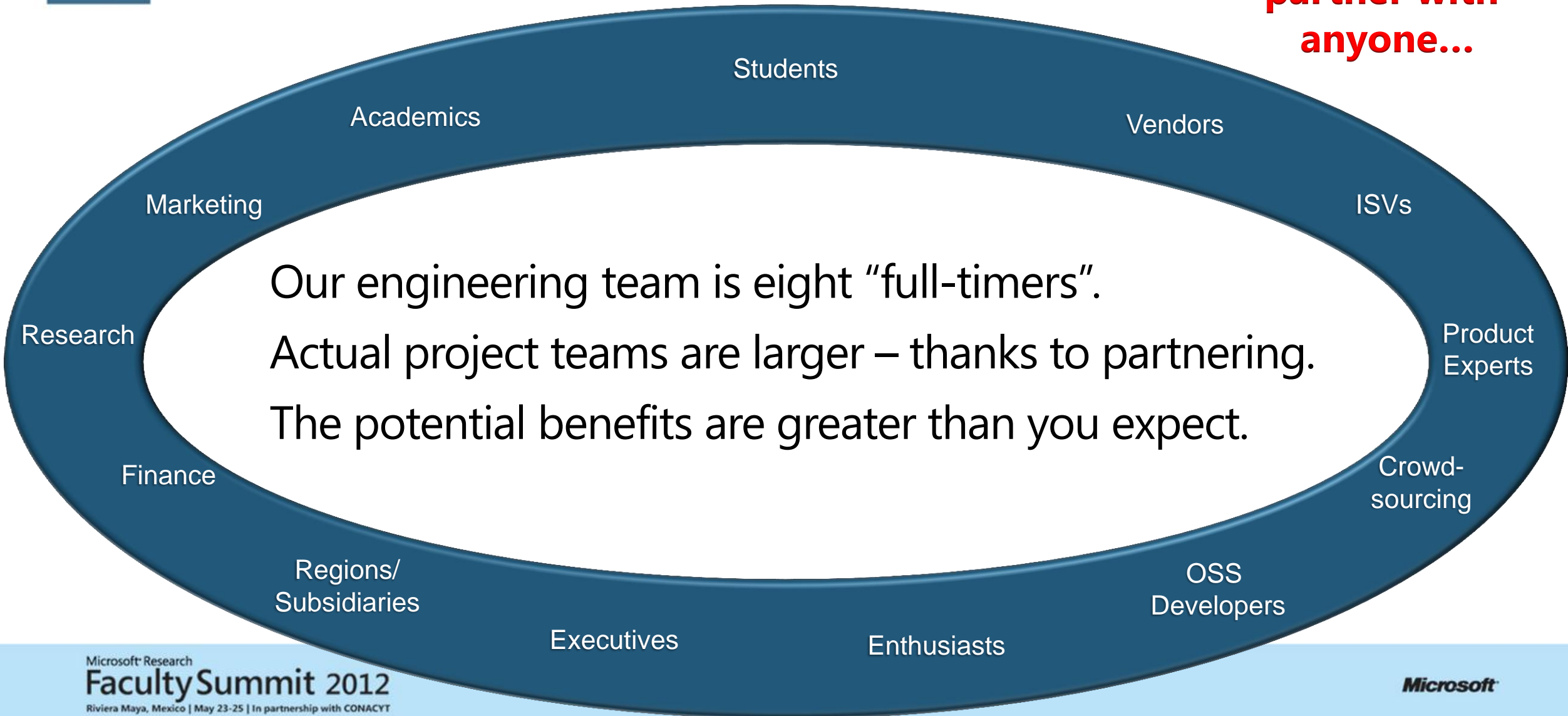
- ▶ Functional Programming
- ▶ F# Development Center
- ▶ Solve Puzzles - Pex4Fun



# Partner Fanatically

$$1 + 1 > 2$$

**This does not  
imply you  
partner with  
anyone...**





# Be the Edge

Embrace and Push New Technologies

## Challenge Boundaries

Don't just live on the edge: *define part of it*

## Advance Your Art

Incubations are about learning and risk taking

## (Poor) Reasons To Avoid New Technology:

It's too hard!

Tools aren't ready yet

Spec is changing

Missing skills

*Never underestimate personal passion!*







# Capitalize on Risk

## Manage It, Pursue It



## Program Management

Overall risk management.  
Risk-driven scheduling.

## Development

Classify team by competencies.  
Be strategic about who does what.

## Test

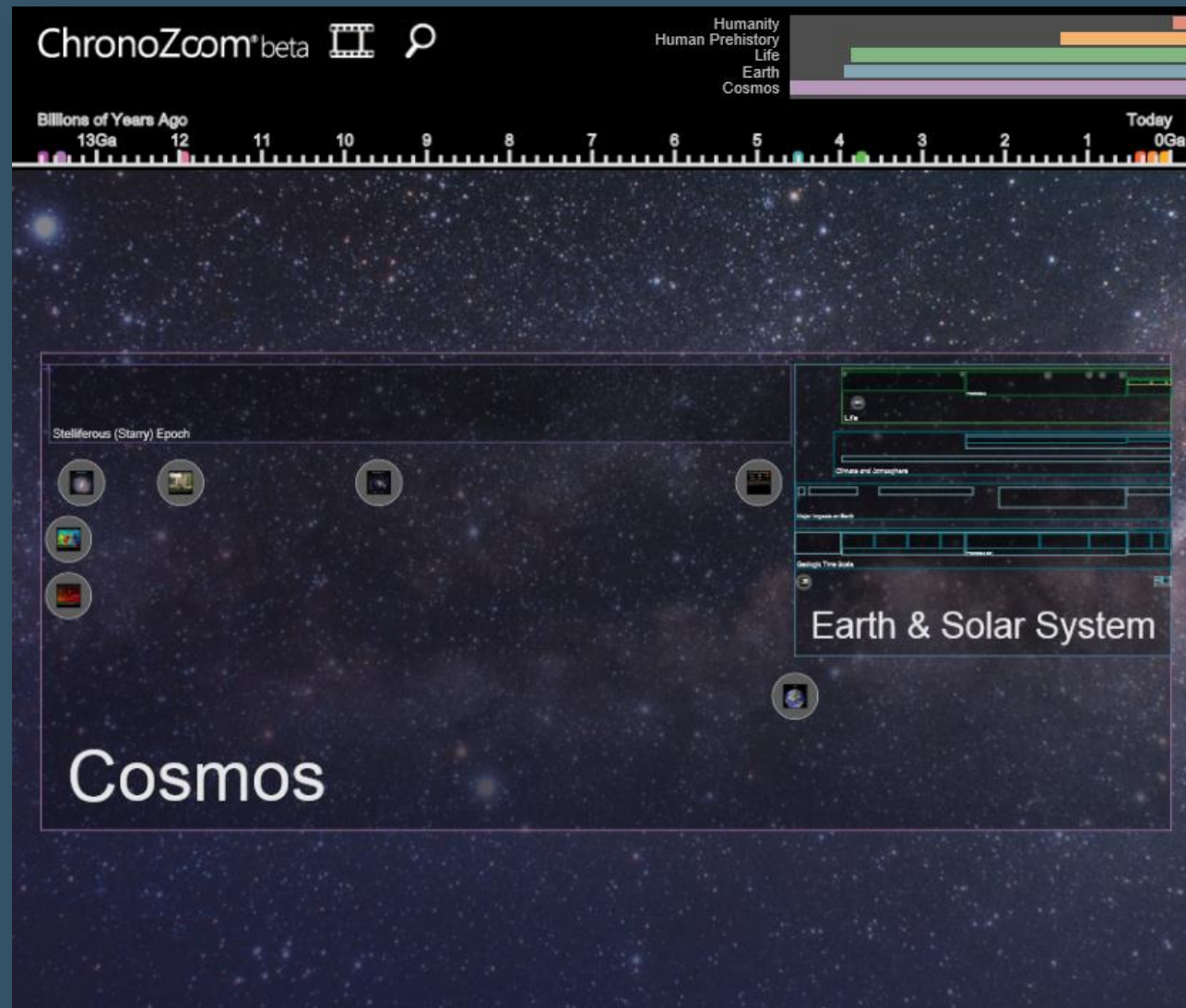
Business prioritized testing.  
Platform multiplier strategies.

## Culture

Embrace risk awareness!  
Pursue riskier opportunities over time.



# ChronoZoom demo





# Recap

## Incubation Lessons Learned



Express Capacity  
Meticulously

Throw Away  
Good Projects

Add Drama

Mandate Business  
Reviews

Open Source  
Prematurely

Partner  
Fanatically

Be the Edge

Capitalize on  
Risk



Microsoft®  
**Research**