



## Web IV&V

Prepared for University of Louisville, July 5, 2005.

© Copyright Stephen E. Arnold, Post Office Box 320, Harrods Creek, Kentucky USA 40027. No part of this document may be used for any purpose without the written permission of Stephen E. Arnold. This is a limited distribution document.

## Topics Overview

- A definition
- Why a “Web IV&V”?
- The facets of the investigation
- Data sources
- The “deliverable”
- Take-aways

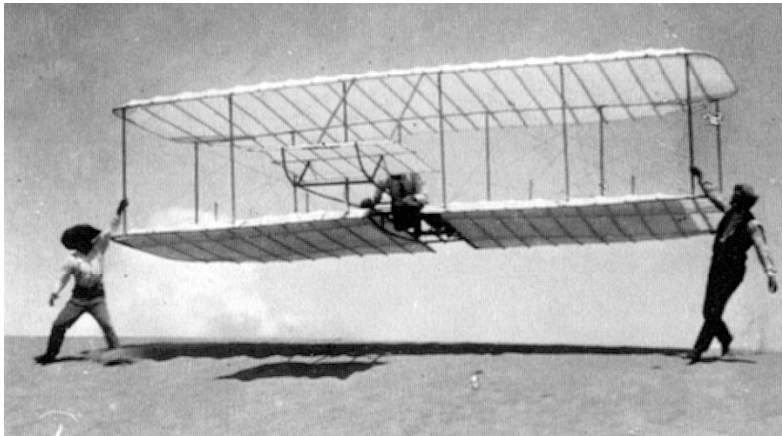
## What is a Web IV&V?

- Web – refers to systems and applications that incorporate Web services
  - Distributed authoring and versioning
  - UDDI
  - WSDL
  - SOAP / REST
  - XML
- “Anything” with a browser interface



**Different from “traditional” IV&V  
because people “assume” the Web  
is easy and managers “understand” it**

## Looks Simple

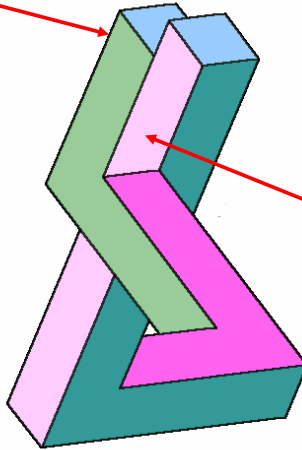


## Why a “Web” IV&V?

- Dependence — Web now pervasive
  - Assumed to be “easy”
  - “One throat to choke”
- Cost issues...
  - Cost to upgrade or “get free”
  - Maintenance costs — consume an entire IT budget
  - Integrate with legacy systems
  - Repurpose data / code
- Complexity — discovered “too late”
- Fear of vendor “lock in”
- Enforce Service Level Agreements

## Facets of the Problem... Paradoxical

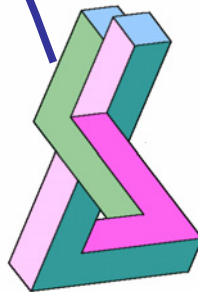
Start here and

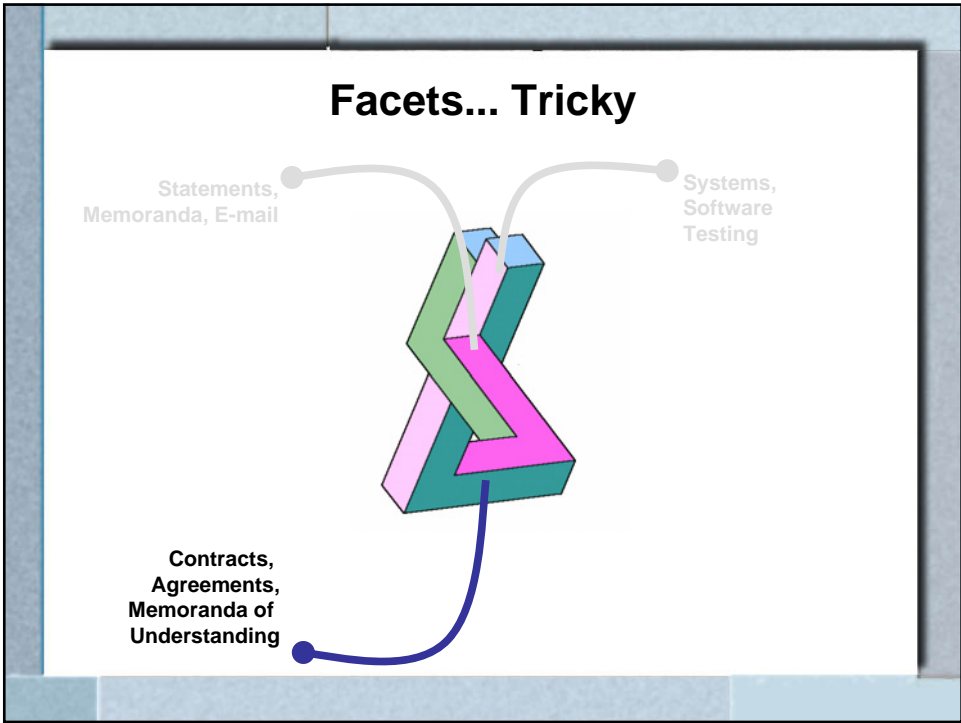
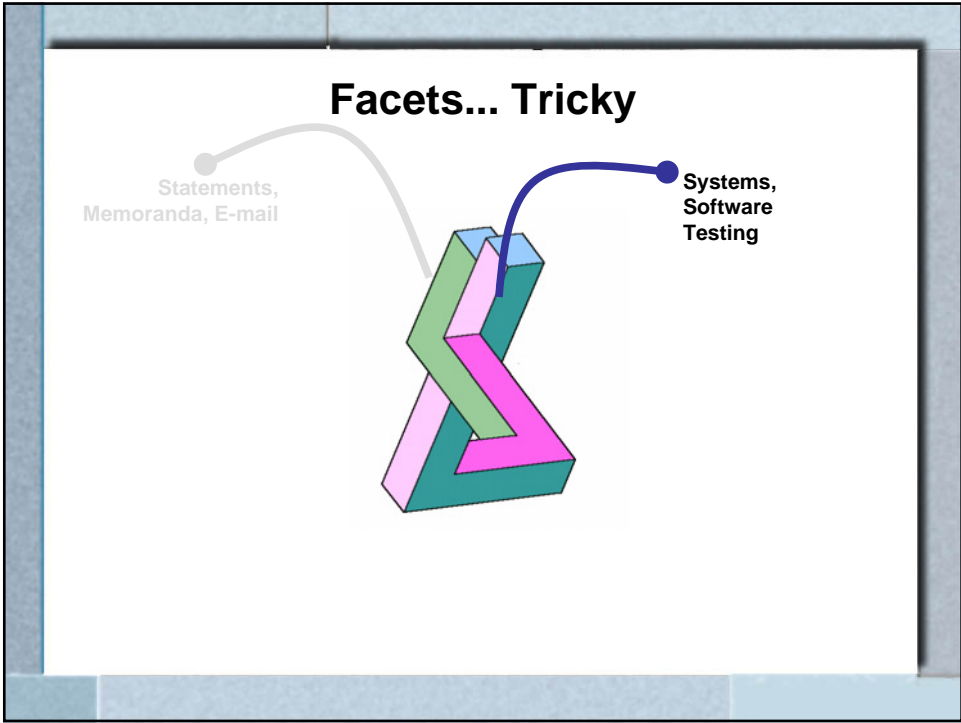


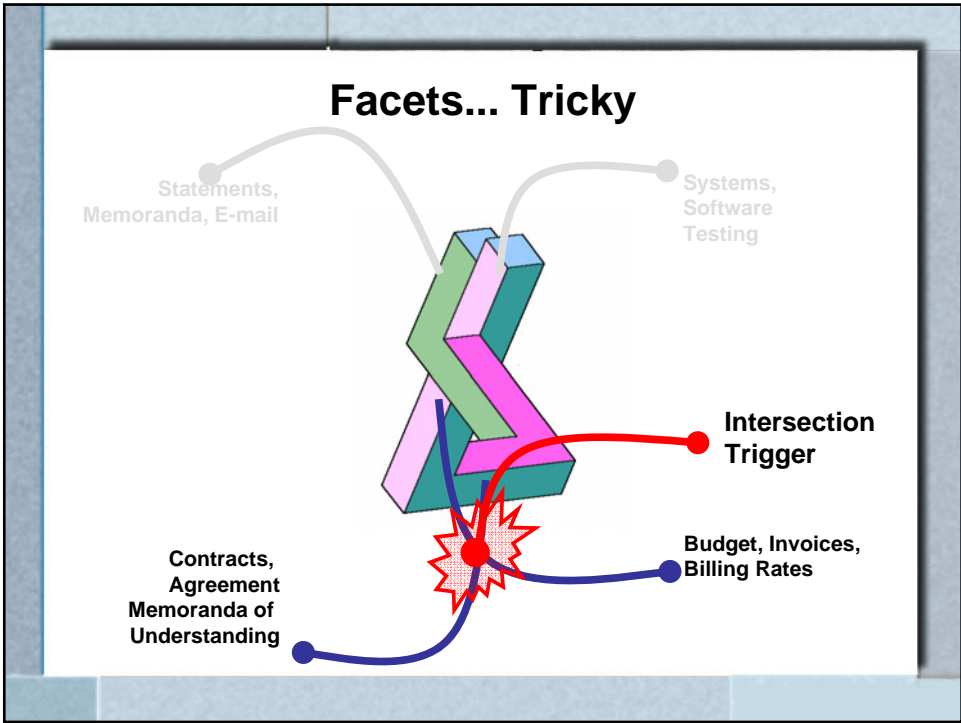
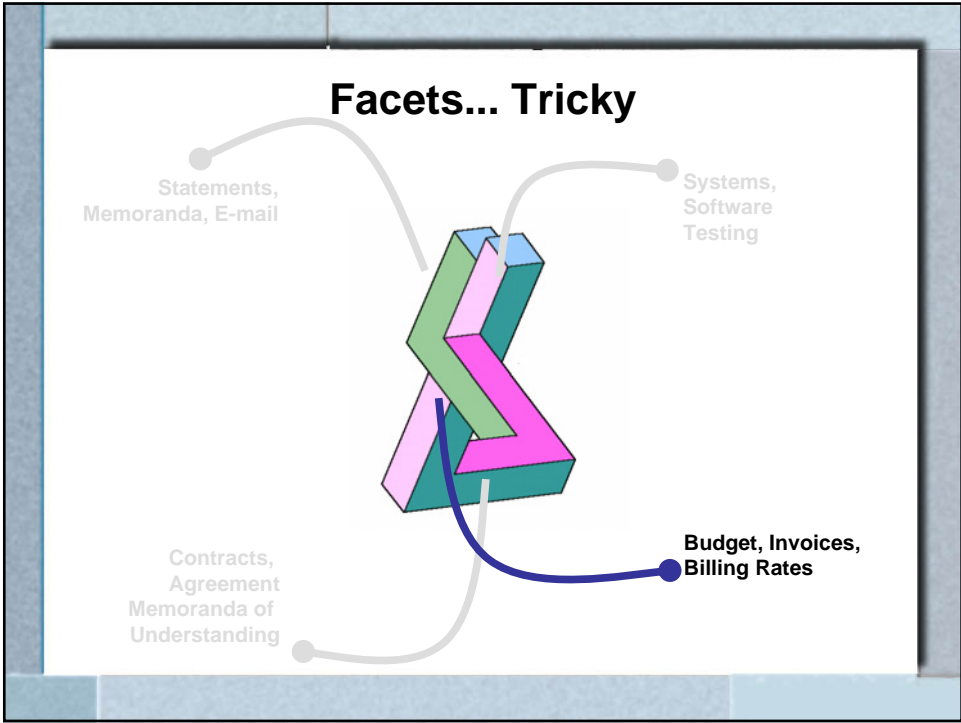
end up in an interesting place

## Facets... Tricky

Statements,  
Memoranda, E-mail



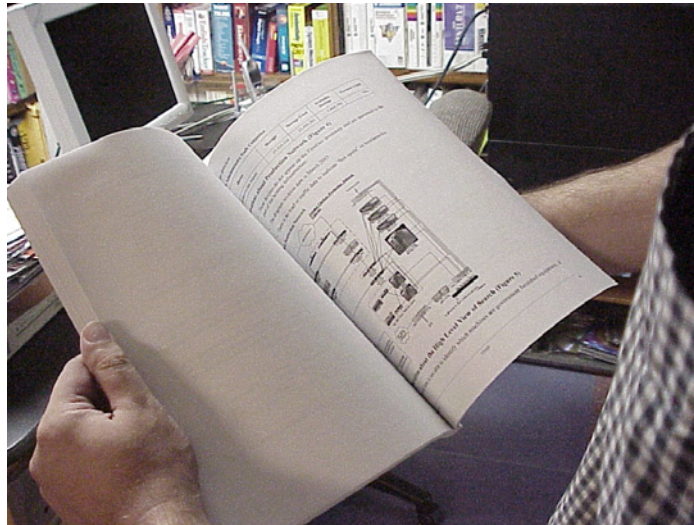




## Data Sources

- Hands-on system use
- Documents
  - Contracts
  - Memoranda
- Interviews
  - Vendors
  - Client professionals
  - Users
- Invoices
- Observation
- Benchmark data / studies

## Deliverable



## The Deliverable

- Background
- Technical information
- Financial information
- Primary research data
- Options
- Recommendations
- Diagrams

## How Much Does an IV&V Cost?

- Professional services
  - \$155 / hour overall average
  - Three to 12 weeks
  - Two to 10 people
- Travel
- Third-party services
  - Testing
  - Code review
- Typical cost: \$15,000 and up



## Nothing on Google / Amazon

The image shows two screenshots side-by-side. The left screenshot is from Amazon.com, showing a search for "web ivv". The search results are empty, with a message: "Hello. Sign in to get personalized recommendations. New customer? Start here." The right screenshot is from Google, showing a search for "web ivv". The search results are also empty, with a message: "Results 1 - 1 of 1 for 'web ivv'. (0.41 seconds)".

## What You Can Read

- Verification and Validation of Modern Software-Intensive Systems -- G. Gordon Schulmeyer, Garth R. Mackenzie
- Software engineering "verification and validation" papers (Software Engineering) Institute
- Information at U.S. Federal Web sites (<http://www.ivv.nasa.gov/index.php>)
- Nato verification and validation documents (<http://www.ora.on.ca/nato/welcome.htm>)
- ACM verification and validation papers
- ArnoldIT Web site: [www.arnoldit.com](http://www.arnoldit.com)



**Requires technical, financial, and  
“detective” skills ... distributed  
systems and virtual applications  
are not well understood yet...**

## **Arnold\_IT**

- “The Enterprise Search Report”, 2<sup>nd</sup> edition comes out in July 2005
- “The Google Legacy” comes out in August 2005
- Description of my consulting practice at [www.arnoldit.com/sitemap.html](http://www.arnoldit.com/sitemap.html)
- For questions or comments: [sa@arnoldit.com](mailto:sa@arnoldit.com)