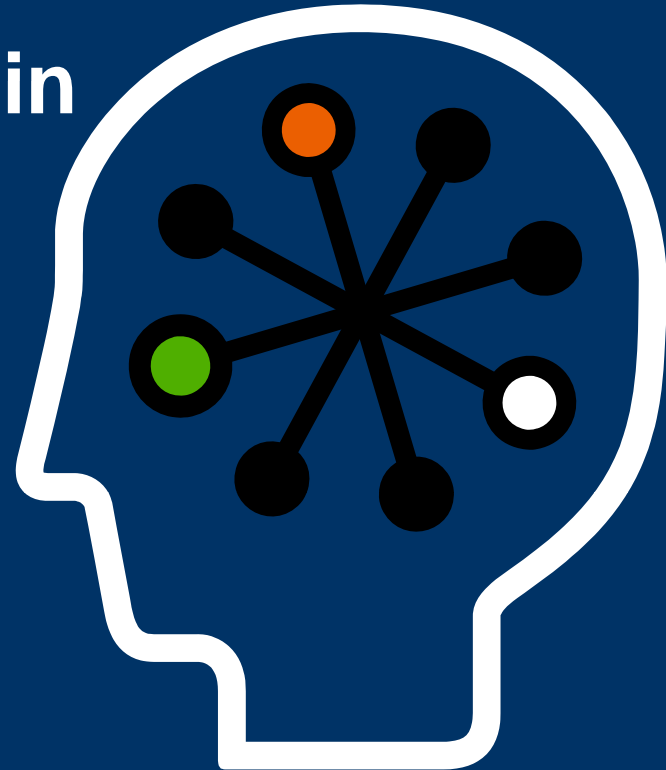


20th Century Applications in the 21st Century: Modernizing Applications

Steve Woods

Legacy Modernization Analyst

Hewlett-Packard Company



Topics

Problem

Human elements

Technical elements

Solution

Overcoming human limitations

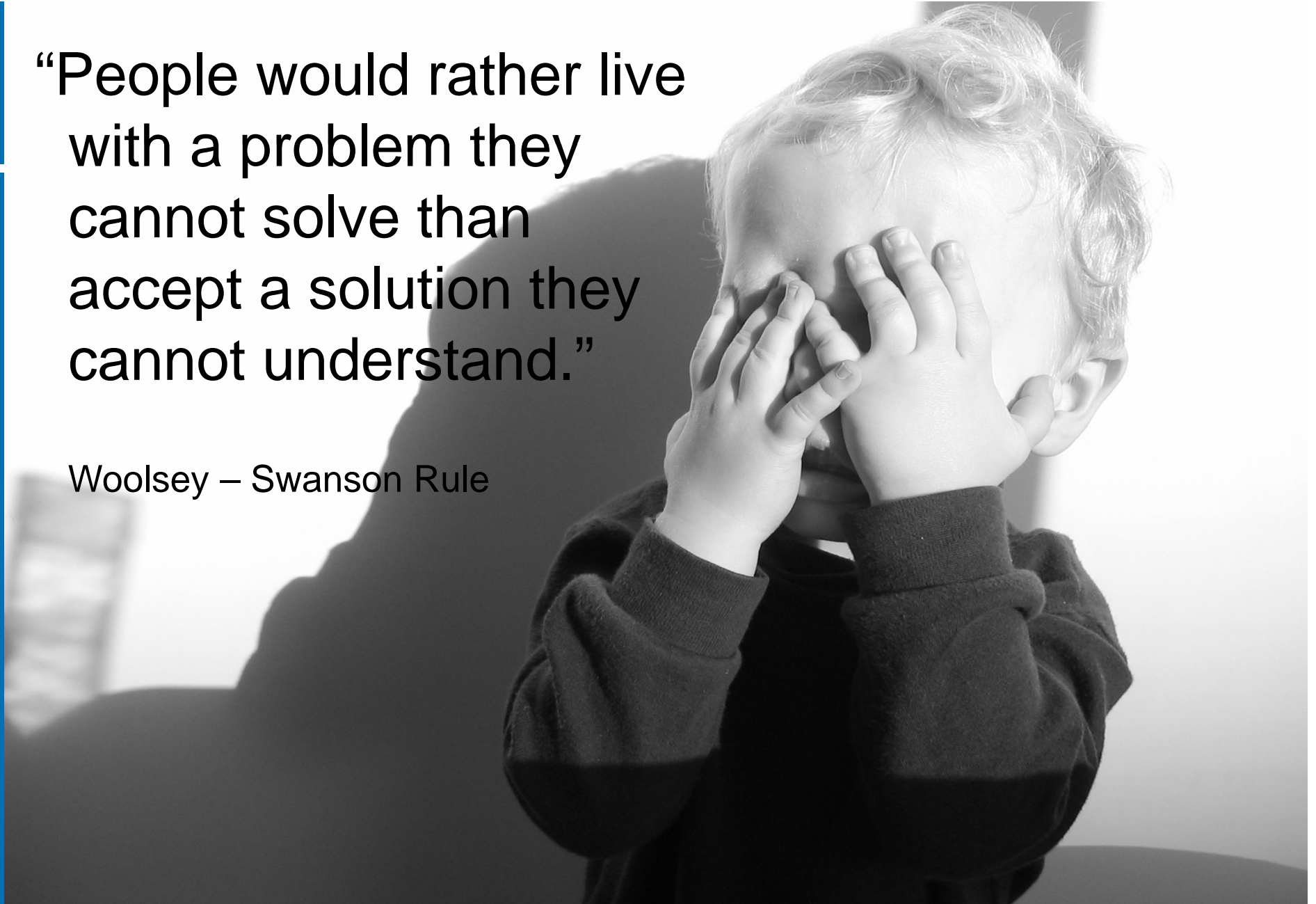
Maximizing human strengths


Example

Questions

“People would rather live with a problem they cannot solve than accept a solution they cannot understand.”

Woolsey – Swanson Rule





Newton's 1st Law

An object at rest
tends to stay at rest

Size

- Cloned code
- Housekeeping code
- Library code
- Code verbosity
- Dead code
- Artifact centric approaches



Four Useful Assumptions

- Your problem is not as unique as you think
- You have more data than you think
- You need less data than you think
- There is a useful measurement that is simpler than you think

Douglas W. Hubbard

How to Measure Anything



How would you measure the number of fish in this lake?

To find out who is watching TV and what they are watching, Nielsen surveys only 5,000 households



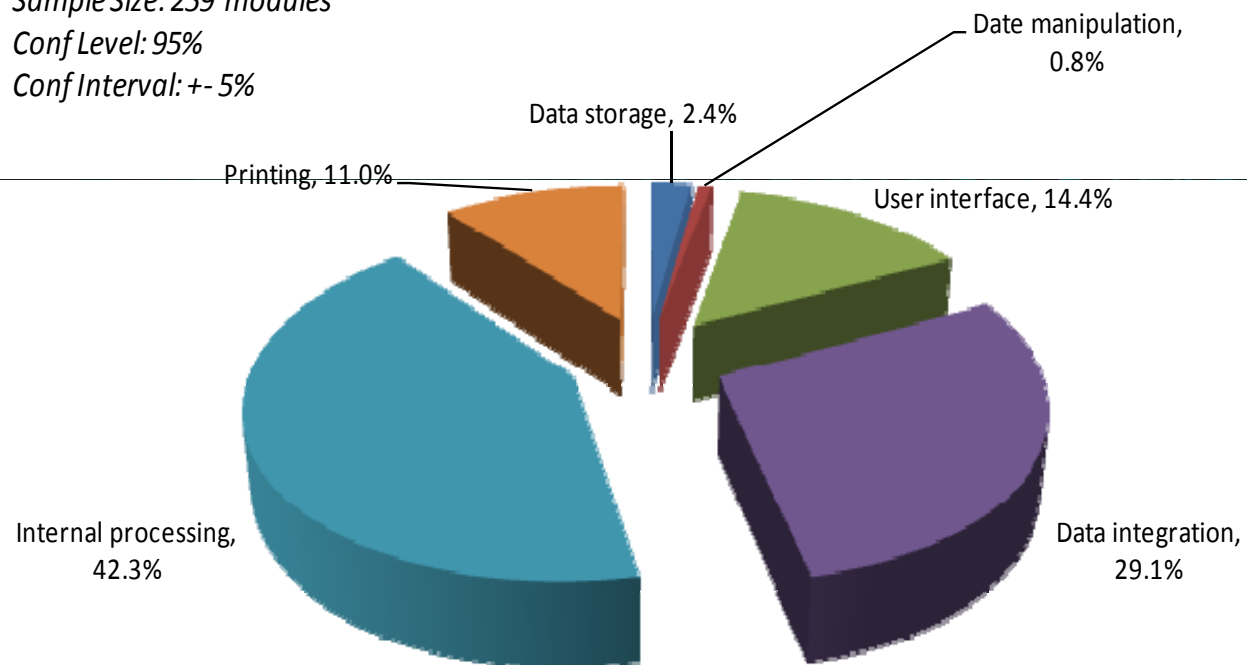
Functional Breakdown

Population Size: 7,500 modules

Sample Size: 259 modules

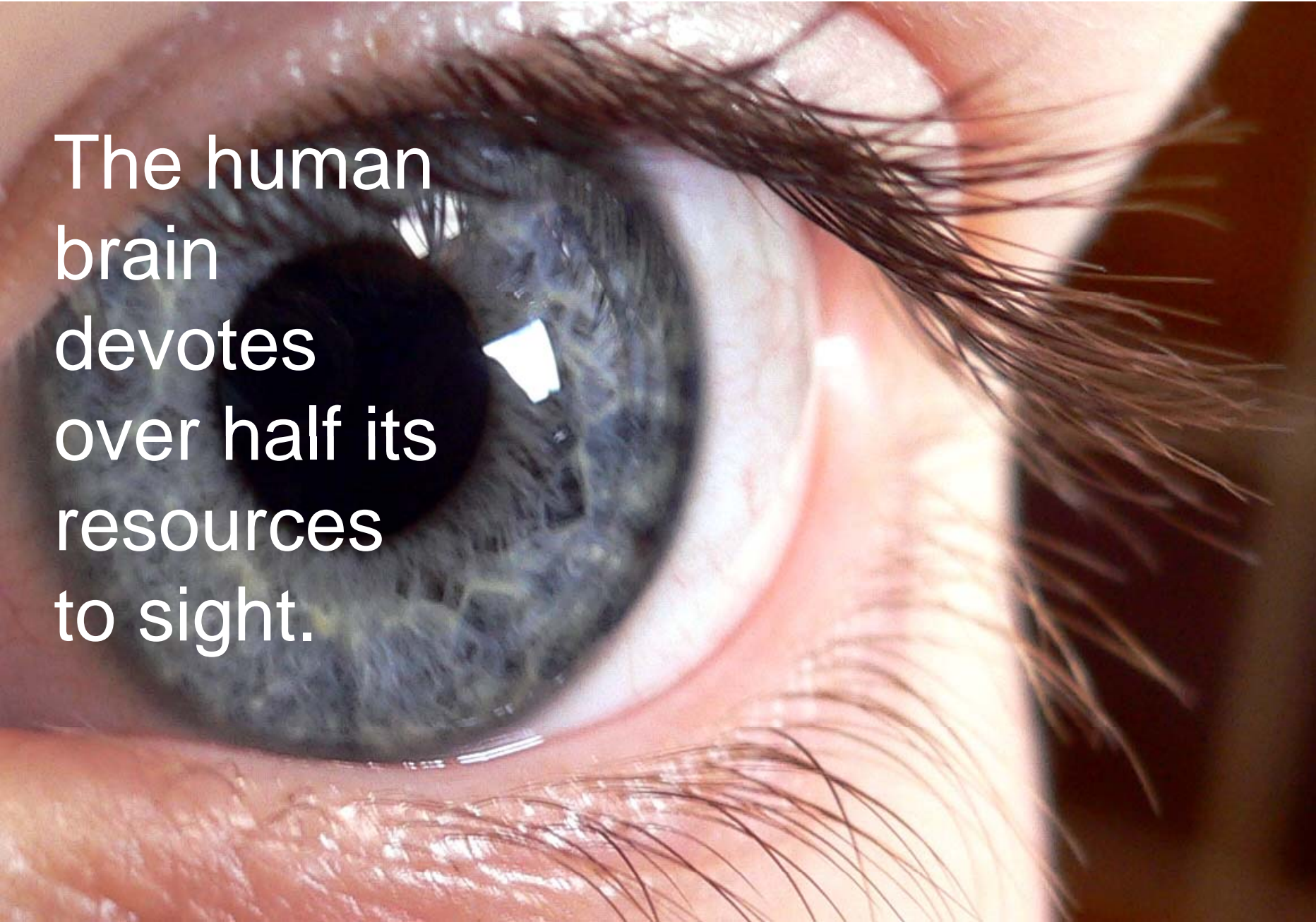
Conf Level: 95%

Conf Interval: +/- 5%



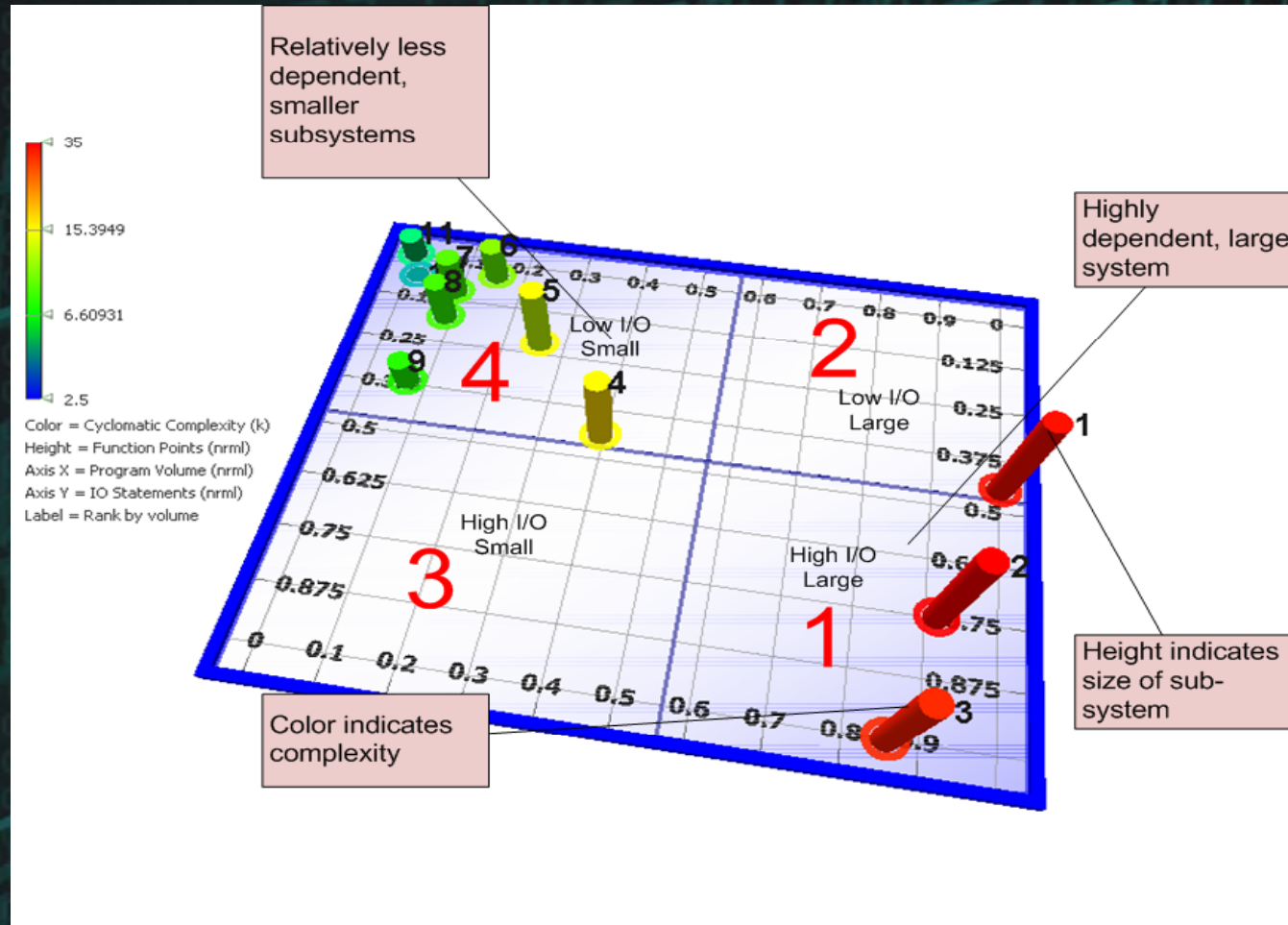


Metaphors are key to
conquering complexity

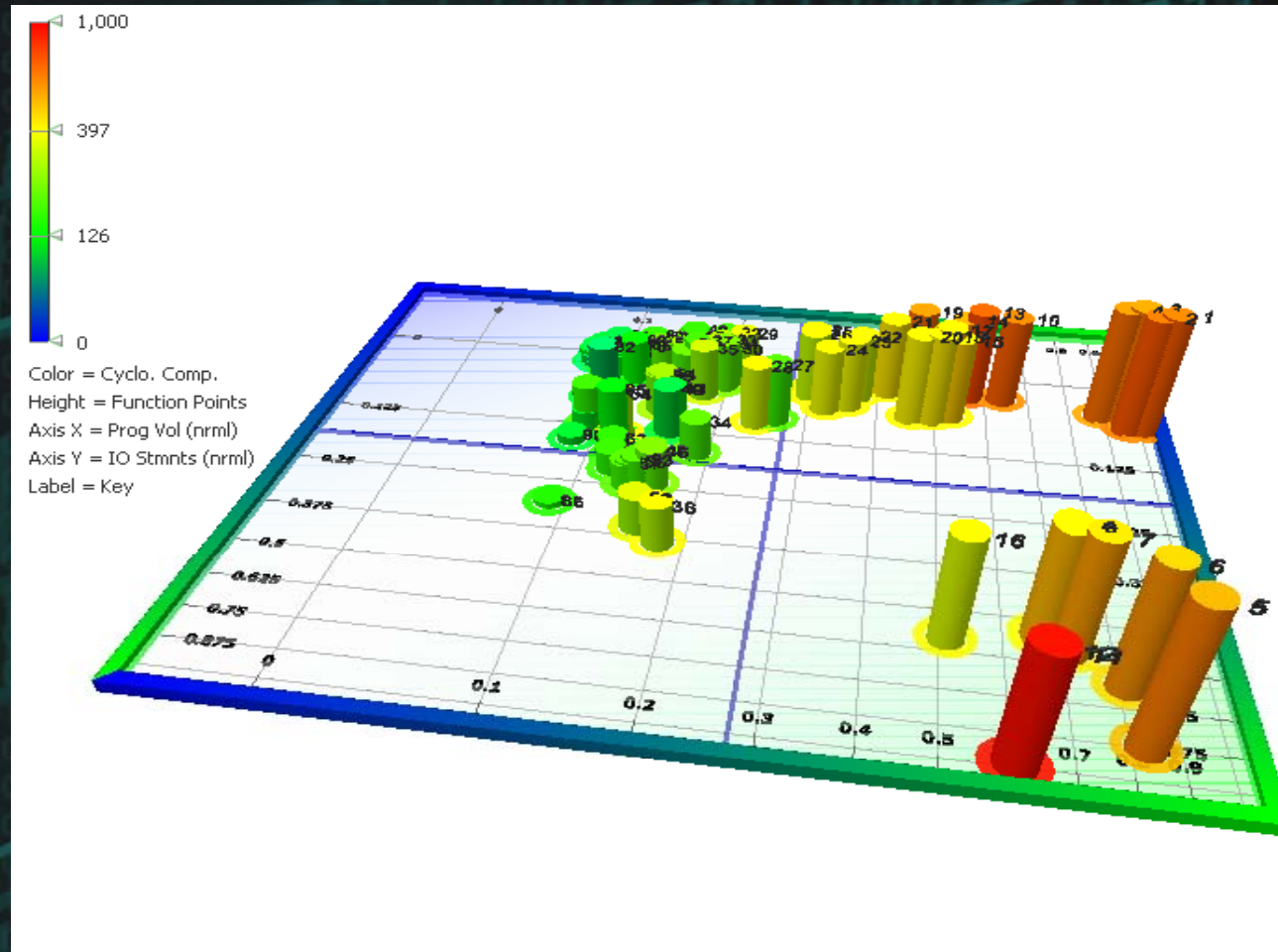
A close-up photograph of a human eye, showing the iris, pupil, and eyelashes. The eye is looking slightly to the right. The lighting is soft, highlighting the texture of the eyelashes and the skin around the eye.

The human
brain
devotes
over half its
resources
to sight.

Application profiling



Module profiling





Metaphor and visualization are strong collaboration tools

AMAZING ILLUSORY "X-RAY" VISION INSTANTLY!

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My money will be refunded in full if I am not 100% Satisfied.


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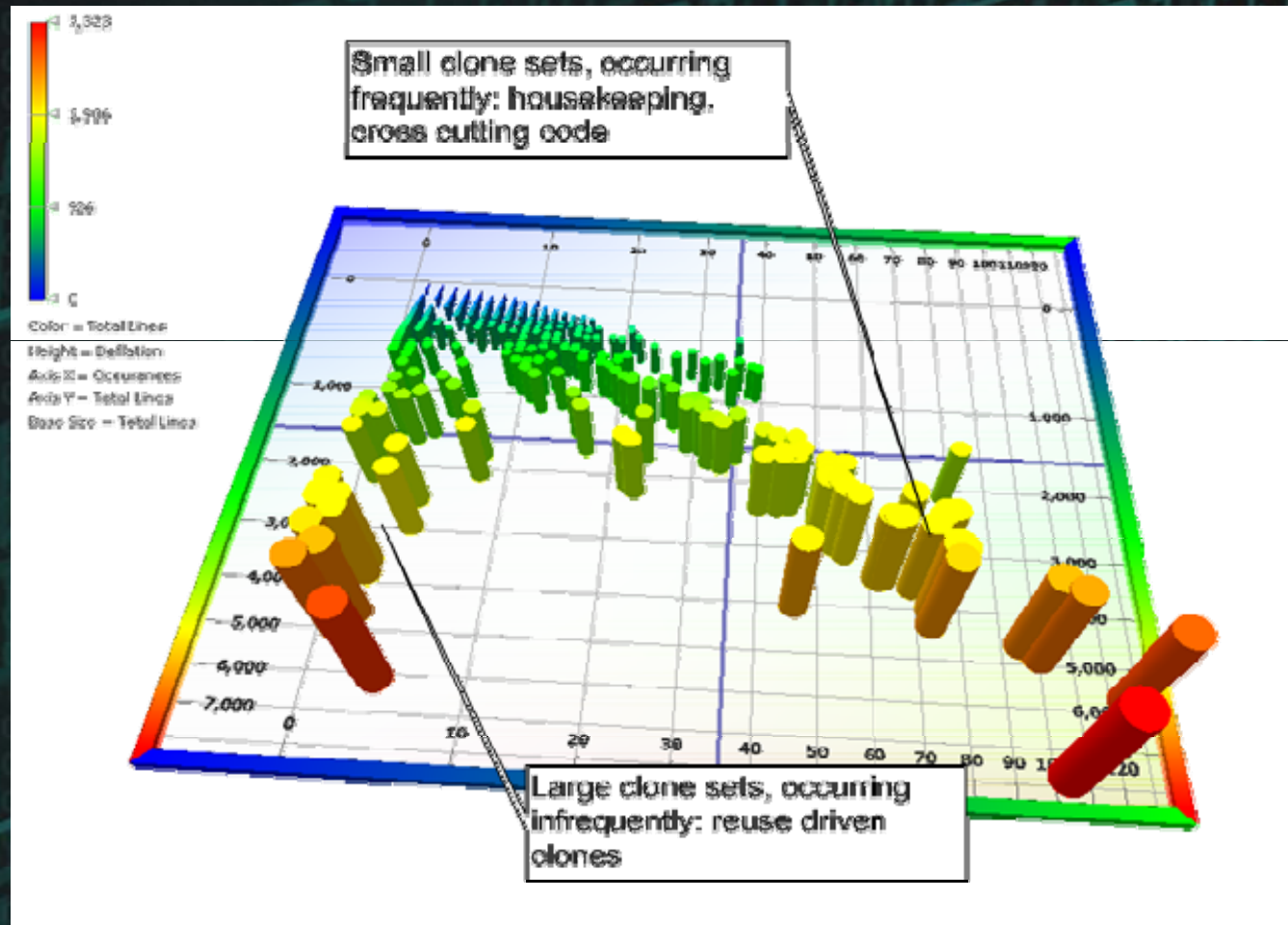
CITY & STATE





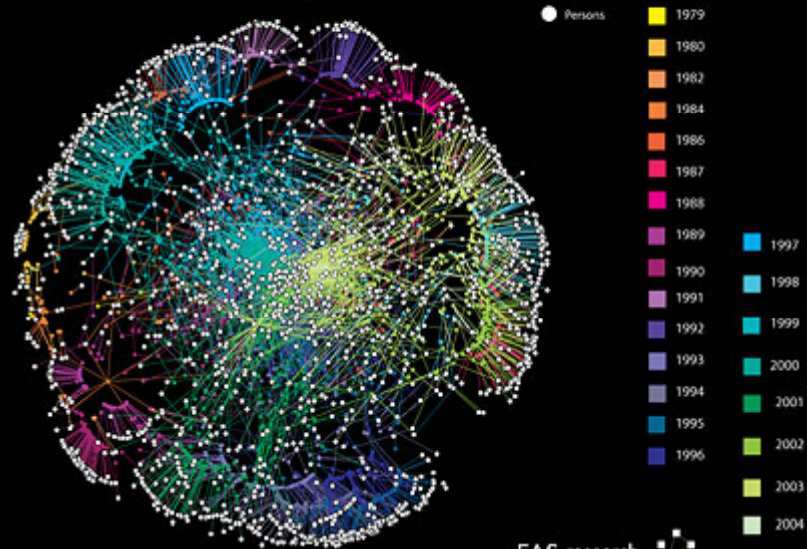
Cloned
code can
represent
as much as
20% of a
legacy
system

Clone set analysis



Social Network Analysis or ...

Ars Electronica - Collaboration Structure of Cultural Projects Over Time
2575 artists and scientists participating in 5176 projects



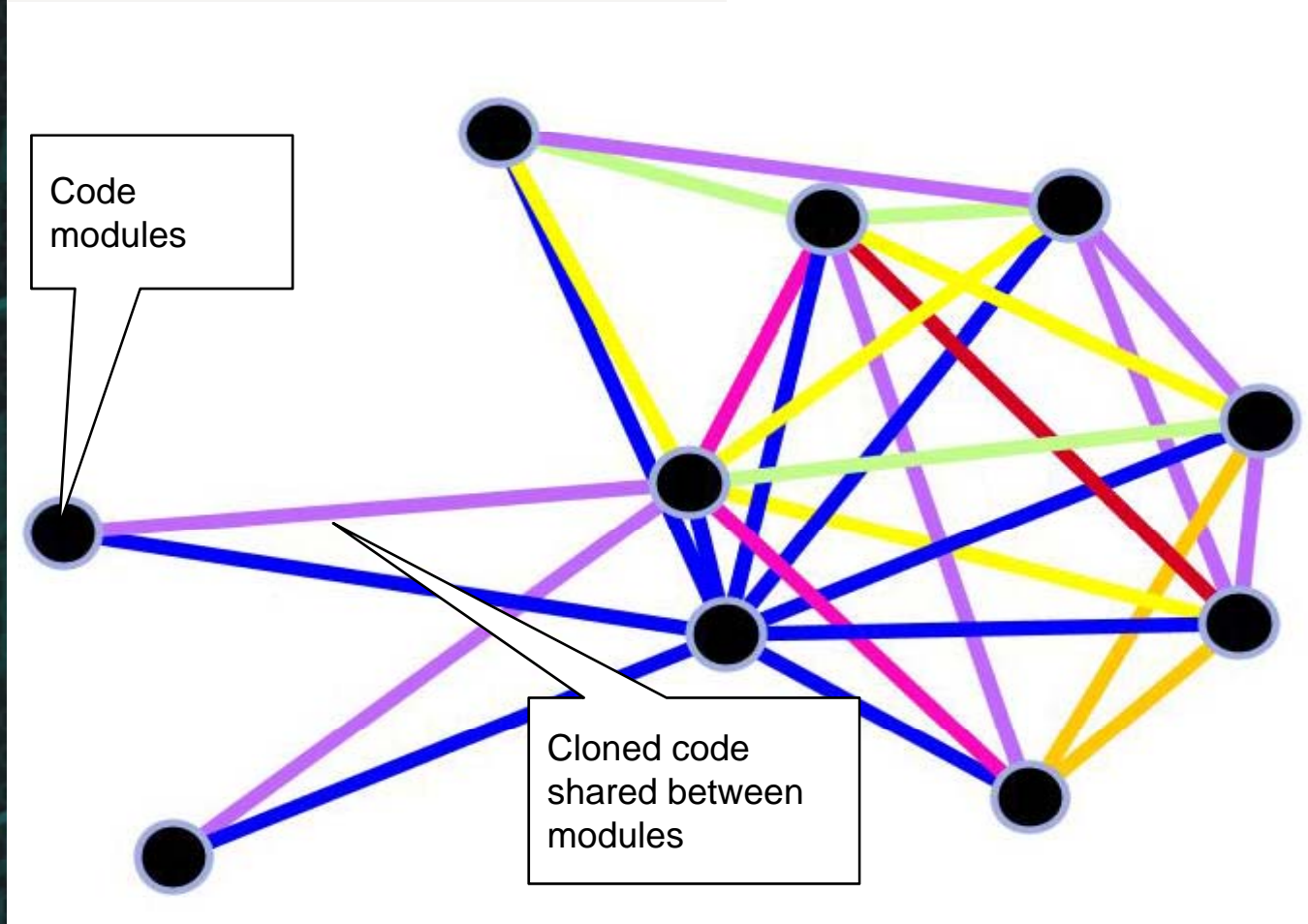
FAS.research
Network Analysis for Science and Business

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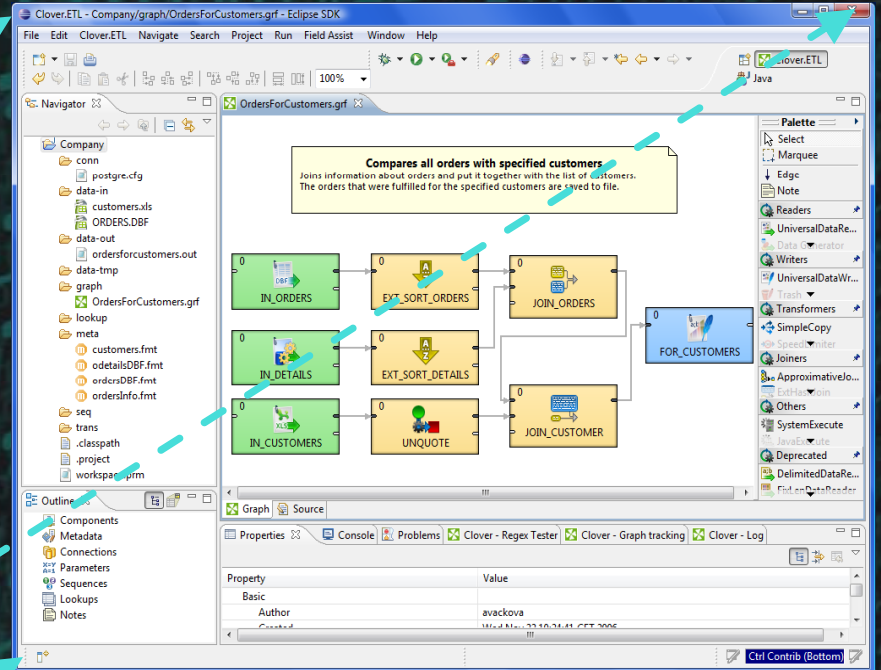
Six degrees of Kevin Bacon

Clone pattern analysis

- Extremely large amount of clones
- Very large amount of clones
- Large amount of clones
- Medium amount of clones
- Small amount of clones




Asymmetrical



```
Local 2
File Edit Transfer Settings Keyboard Help
DEBUG Debug Control Source (c) The Minion People V1.3 PROG: SHOWPGM
PSW 079D000082E00D96 2> 02E001A4 0000 TRAP: 02E00D96 NXT: 00000000
02E00D96 I: D201 A52B 905C OP: MVC 1323(2,R10),92(R9) A: P C: 8
LineID PL SL ---*A-1-B-- Source Statement
000473 PROCEDURE DIVISION USING DFHEIBLK DFHCOMMAREA.
000474 000-MAINLINE SECTION.
000475 MOVE 0 TO WS-HALFWORD.
000476 IF WS-HALFWORD = 0
000477 1 MOVE 0 TO WS-HALFWORD WS-FULLWORD
000478 ELSE
000479 1 MOVE 1 TO WS-HALFWORD WS-FULLWORD.
000480 IF EIBCALEN > 0
000481 1 MOVE DFHCOMMAREA TO CA-DFHCOMMAREA.
000482 *EXEC CICS LINK PROGRAM('DFH0STAT') END-EXEC.
000483 MOVE ' 00381 ' TO DFHEIV0
000484 MOVE 'DFH0STAT' TO DFHC0000
000485 CALL 'DFHEI1' USING DFHEIV0 DFHC0000.
000486 * EXEC CICS XCTL PROGRAM('DFH0STAT') END-EXEC.
02A6AE6D 00000000 .... 03 WS-FULLWORD
02A6AE6E 0000 .. 03 WS-HALFWORD
R0-R7: 02A698C8 00AC3050 02A6A908 02E00058 02A6A1F0 00000000 00AC30D0
R8-R15 02A6B940 02E00148 02A6A940 02E00944 02E00114 02A6A528 02E00004 02A697C0
PFK: 1: DSECT 2: RETURN 3: WAKSTORE 4: SOURCE 5: SET@CRSR 6: HISTORY
PFK: 7: BACK 8: FORWARD 9: ISTEP 10: LFT/RHT 11: REGS 12: RUN
AR-E 0-0 01/007
```

Transformation



Incremental,
asymmetrical
approaches
mitigate risk by
allowing
smaller units of
modernization

Questions?

