

# Languages, Platforms, and Paradigms: Choosing for Long-Term Fit

IEEE Circuits & Systems Society  
Long Island Chapter  
Thursday, June 23, 2011

Robert Gezelter Software Consultant  
35 – 20 167th Street, Suite 215  
Flushing, New York 11358 – 1731  
United States of America

+1 (718) 463 1079  
gezelter@rlgsc.com  
<http://www.rlgsc.com>

**As a courtesy to your  
professional colleagues,  
kindly take a moment and  
set all personal electronic  
devices on silent or vibrate.  
Thank you!**

## Introduction

- Familiar vs. Best Suitable
- Short-term vs. Long-term
- Supportability
- Maintainability

# Frameworks affect expression

- platforms
- paradigms
- languages

## Platforms

- Operating systems (e.g., OpenVMS, \*IX, Windows)
- Applications (e.g., Excel, LabView)
- Toolkits (e.g., jQuery, Motif)

## Paradigms

- strict von Neumann (sequential)
- event-based, serialized
- fully parallel

## Languages

- FORTRAN
- C/C++
- MatLab
- PERL, PHP, APL
- spreadsheets

## Commonality – Modality of Expression

- vocabulary limits what can be said
- 3-space cannot be precisely represented in 2-space
- recursion vs. iteration
- polling vs. events
- single user vs. multiuser



## What is needed now? AND in the future?

- What is the problem domain?
- How can the problem change?
- Headroom
- Short vs. long term leverage
  - Deceptive simplicity
  - Understanding prototypes
  - rewrite cost (monetary, schedule)

## Platforms –

- What are the limits?
- What is/is not included?
  - \*IX – no record formats; need database
  - Windows – multiuser/single user
  - \*IX – “just add a tool”

## Languages –

- are more static than their human analogues
- can be extended with frameworks and toolsets
- still, a fundamental feature may be missing
  - recursion
  - re-entrancy
  - pointers
  - data structures, types

## Languages –

- are more static than their human analogues
- can be extended with frameworks and toolsets
- still, a fundamental feature may be missing
  - recursion
  - re-entrancy
  - pointers
  - data structures, types

## Paradigm –

- pre-emption; determinism
- scope limits/scope creep
- limits

## What is needed now? AND in the future?

- What is the problem domain?
- How can the problem change?
- Short vs. long term leverage

## Summary

- expediency can be very costly
- foresight is priceless
- long-term costs/risks can dominate
- do not underestimate “technological debt”

## Questions?

Robert Gezelter Software Consultant  
35 – 20 167th Street, Suite 215  
Flushing, New York 11358 – 1731  
United States of America

+1 (718) 463 1079  
gezelter@rlgsc.com  
<http://www.rlgsc.com>

Session Notes & Materials:

<http://www.rlgsc.com/ieee/longisland/2011/index.html>