



A SHORT HISTORY OF PERFORMANCE ENGINEERING

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About Me

- Specialized in performance engineering since 1997
- Currently performance testing and optimization of Enterprise Performance Management (EPM) / Hyperion products at Oracle
- Board director at CMG

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There Was [Performance] Life Even Before Web

- Some statements referring to history look incorrect
- Performance engineering history is not well known
 - Not much information readily available
- So I decided to share a few bits of information I found



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The Approach

- First mature appearances of still relevant performance notions
 - From what I found
 - No discussion about further rich history of each notion
- My subjective choices based on very limited information



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Computing Paradigms

- Looks like a new wave of performance engineering starts 10+ years after new computing paradigm
- Mainframes
 - Late 50s
- Distributed Systems
 - Late 70s
- Web
 - Mid 90s
- ? – Mobile, Cloud



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1966: Instrumentation

- 1966 – SMF (System Management Facilities) released as part of OS/360
 - Still in use

Observability
IT Operations
Analytics
Big Data
Deep Diagnostics



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1968: Response Times

- 1968 - Robert Miller (IBM) in his "Response Time in Man-Computer Conversational Transactions" paper described several threshold levels of human attention
 - Widely cited by many later researchers



1974: Monitoring

- 1974 – RMF (Resource Measurement Facility) released as part of MVS
 - Still in use
- 1975 – OMEGAMON for MVS by Candle
 - Claimed to be the first real-time monitor
 - Acquired by IBM in 2004



1975: Community

- 1975 – The Computer Measurement Group (CMG) was created, holding annual conferences since

<http://cmg.org>



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1977: Performance Analysis Tool

- 1977 – BEST/1 was released by BGS Systems, capacity and performance management tool
 - the first commercial package for computer performance analysis to be based on analytic models.

▪ BGS Systems was acquired by BMC Software in 1998

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Work with BEST/1 Model
Performance data . . . : BESTDATA (Q930400309)
Model/Text . . . . . : BEST1MODEL

Select one of the following:

  1. Work with workloads
  2. Specify objectives and active jobs

  5. Analyze current model
  6. Analyze current model and give recommendations
  7. Specify workload growth and analyze model

 10. Configuration menu
 11. Work with results

More ...
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Late 70s - Distributed Systems

- Distributed Systems
 - Client/Server, Three-Tier, N-Tier, etc.
- Less control, less instrumentation
- More need for performance design and testing

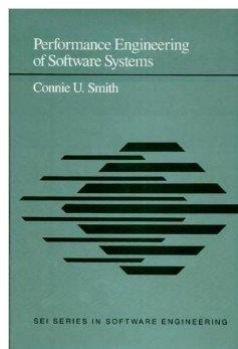


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1990: Software Performance Engineering

- 1990 – Dr. Connie Smith's book Performance Engineering of Software Systems was published
 - 15 pages of bibliography

"Fix-it-later was once a viable approach, but it is now inappropriate and dangerous"



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Does It Remind You Anything?

- Fix-it-later was a viable approach in the 1970s, but today the original promises no longer hold, and fix-it-later is archaic and dangerous. The original premises were:
 - Performance problems are rare.
 - Hardware is fast and inexpensive.
 - It's too expensive to build responsive software.
 - You can tune software later, if necessary.

Performance Engineering of Software Systems, 1990.



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1991: Load Testing Tools

- 1991 – LoadRunner was released by Mercury Interactive
 - Acquired by HP in 2006 for \$4.5B
- Performance expertise moves to performance testing teams



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Application Performance Management (APM)

- The term was coined by Programart Corp. (acquired by Compuware in 1999) in 1992 (in the mainframe context, as a combination of their STROBE and APMpower tools)
 - STROBE had been on the market since the '70s
- Introscope by Wily Technology, founded by Lew Cirne in 1998 (acquired by CA in 2006)

If supply can't go up, demand must come down. And the key to decreasing demand is improving your applications' performance.

Now there's a way to do just that. Application Performance Management.

With an APM strategy, IS departments in MVS mainframe environments can manage performance and cost throughout an application's life cycle. As a result, applications are deployed on time and provide high performance from Day One. What's more, APM proves truly invaluable in the long term, because it helps you keep performance high even when business requirements,

workload and technology change.

The bottom line? You save money, satisfy customers and give your company a competitive edge.

Who knows, you might even bring a smile to your Directors' faces.

How do you get Application Performance Management working for your IS department?

Through STROBE and APMPOWER from Programart.

For a free demonstration of just how much you can save, talk to us today at 617-498-4005.

It's got to be better than talking to the Board.

PROGRAMART
CORPORATION



APM, APMPOWER, STROBE, and Programart are trademarks or service marks of Programart Corporation. ©1998 Programart Corporation.

1998: End-User Monitoring

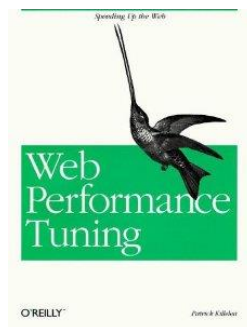
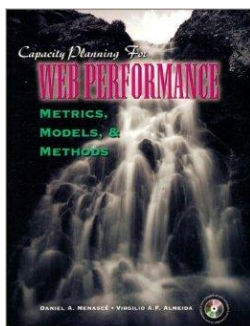
- 1998 – ETEWatch released by Candle
 - Application response time monitor
 - End-to-End Watch
 - Candle acquired by IBM in 2004, then a part of Tivoli



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Mid 90s - Web

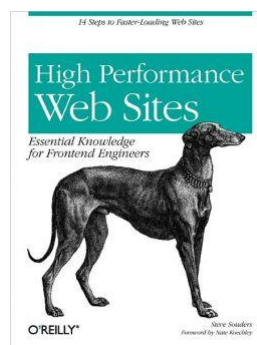
- Most of existing expertise was still applicable to back end
- Books applying existing expertise to Web (1998)



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2007: Web Performance Optimization

- 2007 – Steve Souders' book High Performance Web Sites: Essential Knowledge for Front-End Engineers
- New Web-specific expertise
- 2008 – WPO Community
 - First Velocity conference
 - WebPerf meetups



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Cloud Computing

- References to "cloud computing" appeared as early as 1996, with the first known mention in a Compaq internal document
- Cloud computing was popularized with Amazon releasing its Elastic Compute Cloud product in 2006
- Third-party autoscaling software Scalr and RightScale appeared in 2008. Amazon launched its own autoscaling feature in 2009.



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What Concepts / Terms will Remain?

- ITSM (IT Service Management)
- ITOA (IT Operations Analytics)
- AIOps (Artificial Intelligence for IT Operations)
- Digital Operations Management
- Digital Experience Management
- Service Mesh
- ...



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Takeaways

- Check your facts when you refer to history
- A lot was done in the past – not always necessary to re-invent the wheel
- The feeling that we are close to solving performance problems exists last 50+ years
 - Probably will stay with us for a while



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QUESTIONS?

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