

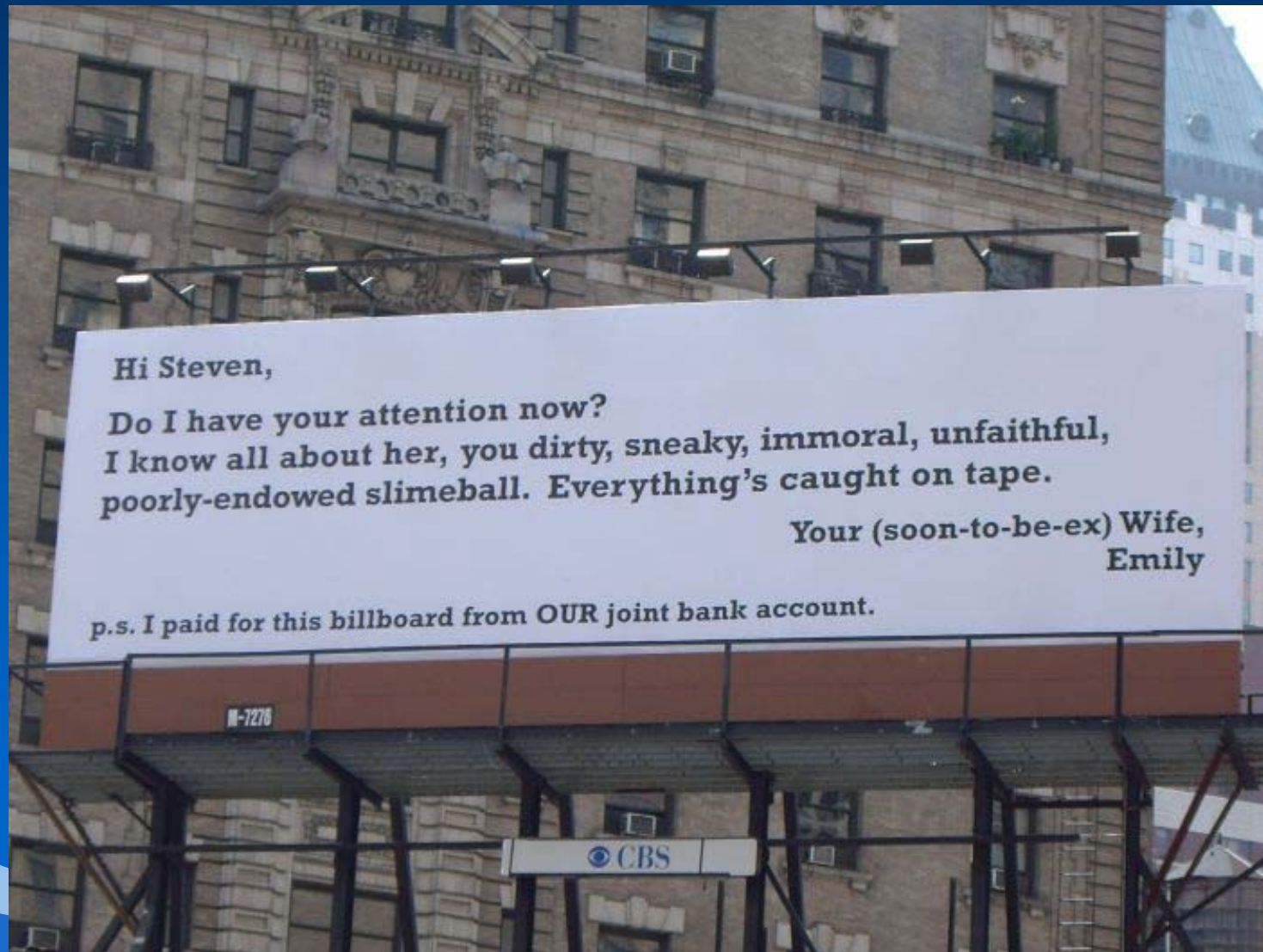
The Multidisciplinary Test Engineer – Is That a Future Necessity?

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Introduction

- **Alon Linetzki**, Bs.c., MBA (with honor), LQA, CSA, CTFL
- In IT since 1983, as SW development engineer, systems analyst, test engineer, test leader, test manager
- 10 years in development, 7 of them in military systems,
- 13 years in testing complex systems (TesCom, IBM, Amdocs)
- Main expertise are: strategic & implementation consulting in risk based testing, test management, team building, test design optimization, and more.
- A trainer in Israel and Europe for the last 10 years
- Founder of SIGiST Israel (2000)
- VP Marketing for ITCB
- Speaker in national & international conferences (Euro Star, ICSTEST, CONQUEST, etc').

I wanted to get your attention!



Agenda

- Technological & Personal aspects of growth
- Job requirements – trend in Israel
- Non-analytical skills and how they affect TTM
- *Process & Business Supporting Knowledge*
- Tracking knowledge growth within your teams
- We must evolve – but where to?
- *Allot more to talk about on the break...*

5 Dimensions, One Goal

1

Technical &
Technological

2

Application
Specific

3

Testing Skills

4

Process &
Business
Supporting
Skills

New!

5

Communication Skills

New!

Technological & Personal aspects of growth

- How Technology influence us?
- Technology aspects
 - C++, Java
 - C#, VB.NET, .NET framework, J2EE
 - SOA
 - Networks
 - Mobility – wireless, routers
 - Connectivity

Technological & Personal aspects of growth

- How Technology influence us?
- Personal aspects
 - Consumption systems and mission critical systems are more common
 - Our interest becomes more technical (wide) on one hand, and less on the other (depth)
 - Chips are controlling our lives

How Many Chips Control my Life?

Technological & Personal aspects of growth

- From what we have observed systems with:
 - More **Complexity**
 - More **Network elements**
 - More **mission critical systems**
 - More **interfaces**
 - More **systems**
 - More and with **New technology**
- Are being developed, and must be tested!

Job Requirements – 2 Years Ago...

Job requirements^(*) – trend in Israel

2 years ago

- Technology knowledge items that were required for test engineers were - :
 - Knows basic methodology in testing
 - Written testing documents (STD & Bug report mainly)
 - Was responsible for test design (test cases & data)
 - Knows test management tools, and worked with at least 1
 - Unix, Win
 - Client Server testing
 - Web testing
 - SQL knowledge (Oracle).

(*) SELA Technology Center

Job requirements^(*) – trend in Israel

2 years ago

- Personal skills knowledge items that were required for test engineers were - :
 - Can perform routine jobs
 - Fast learner
 - Team work personality
 - Responsible
 - Can stay long hours or work night shifts.

Job Requirements – Today

Today

- Technology knowledge items that are required for test engineers are more - :
 - All of the “old” topics
 - Programming capabilities
 - DB detailed knowledge (SQL mainly)
 - CM Tools
 - PERL, TCL/TK, KShell
 - Audio, Video, Wireless Protocols

Today

- Personal Skills knowledge items that are required for test engineers are more - :
 - Team Work personality
 - Responsible
 - Can work alone
 - Fast learning person
 - Can distinguish in 'right & wrong' situations and can prioritize
 - Adhere to methodology, methods and techniques
 - Good English, other languages – advantage (Chinese – the best)
 - Reliable, reports right and well
 - Express well in written and oral language.

Non-analytical Topic Skills And How They Affect TTM

- Good Personal Communication
- Assertiveness
- Performing under pressure
- Loyalty and reliability
- Responsibility and sticking to the cause
- Being a Leader
- Visionary

Non-analytical topic skills and how they affect TTM

- Polycom testing Manager:

“Everybody on my team should be a test manager. They know it, I expect it from them... They should even know how to escalate to development director if needed”.

Do you think the qualities we discussed will help this guy escalate?

DEFENETLY!

Summary So Far

- Dimension 1 -Technology & personal aspects have more impact –systems being developed & job requirements on the market.
- Dimension 5 - Non-analytical skills are more appreciated to be a driver for project's success.
- *We should develop our next generation of test engineers differently.*

We should start seeing things differently...

What our
office needs...




Process & Business Supporting Knowledge

- What impact on project success do you think a tester would have if knew: product management, sales, field support, system admin, project management?

Huge

Process & Business Supporting Knowledge

- Product management, ↔ • Know how product is built, and what is its architecture design weaknesses,
 - Project management
 - Field support,
 - System admin,
 - Sales,
 - Know how products/projects are sold (turn key, partners),
 - Know what clients think of product and what enhancements they seek in next release,
 - Know testing environments and CM tools customization,
 - Know micro management, the big picture and overall mission
- 

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Tracking Knowledge Growth Within Your Teams

- Now that we have a goal to train our testers, we need a way to track it all,
- Analysis of knowledge can bring to better test design, better personal and professional improvement,
- Reduce risk of exposure to new development topics,
- More flexible to changes from management (always during execution...)

Tracking Knowledge Growth Within Your Teams

Knowledge Accumulation Tracking:																
	Infrastructure		Tools		Applications											
	Unix	SQL	Toad	Files-AID	SC	MAF	MPS	BL	FBF	CSM	EMS	Total H	Total M	Total L	Total	
Yossi A	H	H	M		H	H	M	M	M	L		4	4	1	9	
Dani G	M	M	M	M	M					L		0	5	1	6	
Tal G	H	M	M	L		L	H	H	H			4	2	2	8	
David T	L	M	M	L				M		M		0	4	2	6	
Keren Y	H	H	M									2	1	1	4	
Total H	3	2	0	0	1	1	1	1	1	0	0	10				
Total M	1	3	5	1	1	0	1	2	1	1	0	16				
Total L	1	0	0	2	0	1	0	0	0	2	1	7				
Total	5	5	5	3	2	2	2	3	2	3	1	33				

Applications:
H= test design
L= test execution only
M= test design first time in this application

Less than 3 for column, less than 7 for person.

Although we have 7 diff appl. we have only 5 people covering them. One is covered for none.

Yossi has not done design so far, yet he is assigned with 5 new design topics

Where are my teams main challenges and exposure?

Tracking Knowledge Growth Within Your Teams

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	Infrastructure		Tools		Applications							Total H	Total M	Total L	Total
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Yossi A	H	H	M		H	H	M	M	M	L		4	4	1	9
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Tal G	H	M	M	L		L	H	H	H			4	2	2	8
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Applications:

H= test design

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Less than 3 for column, less than 7 for person.

Keren is - Single applicative

Same grade (5), but different

EMS - lack of knowledge in team

We must evolve – but where to?


First – be creative!



We must evolve – but where to?

- Our weakest spot is in our skills and abilities – lets put our emphasis on that
- Map overall aspects of testing knowledge needed today including knowledge in other areas
 - product management, sales, technical support, field support, documentation, localization, system administration, quality assurance, project management
 - lets train our people on those

We must evolve – but where to?

- Consider soft-skills aspects as relevant for “Good Test Engineer”, and with high priority
- Coordinate “what testers do” or “should be doing” with other development organization groups and internally with test engineers/TLs. 
- Do not neglect traditional training and coaching but just do it better!
 - Emphasis on Skills like test design, requirements analysis, documents writing, etc’

We must evolve – but where to?

- There are 5 dimensions to future tester training:
 - Technical/Technological
 - Application Specific
 - Testing Skills
 - Communication Skills
 - Process & Business Supporting Skills

We must evolve – but where to?

The hard way should
be the **only** way for
all of us

Thank You

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How Many Chips Control my Daily Life? (until lunch time)

How Many Chips control my daily Life?			
Action	Direct/Indirect	Number	Device
Wake Up	D	1	Electronic Clock
Brush	D	1	Electronic Tooth brush
TV	D	3	TV, Cable, Box, Transformer
Water	I	1	water gets to me from central city facility
Electricity	I	1	electricity gets to me from central city facility
Air Condition	D	1	Home air-condition
Toast	D	1	Electroinc Toaster
Take out Laondry	D	1	Washing Machine
Hot water	D	1	Thermostat on Boiler
Computer - morning emails	D	3	CPU, Games board
Drive	D	3	Car CPUs
Laptop	D	1	Laptop CPU
Air Condition	D	1	Air condition at work
Lock	D	1	Door combination lock
Enter Car to Work	D	1	Garage Door at Work
Traffic Lights on the way to work	D	2	14 traffic lights on the way. Probly all connected to central SW, so more chips here.
Water at work	I	1	
Electricity at work	I	1	
Fire detectors	I	1	
Smart building Facilities	I	2	Elevator, door locks, building air-condition, etc'
car drive to clients	D	3	Car CPUs
Air Condition at restaurant	D	1	
Food preparation	D	1	Microwave, oven, other...
Up to Lunch time	Direct	26	
	Indirect	7	
		33	

