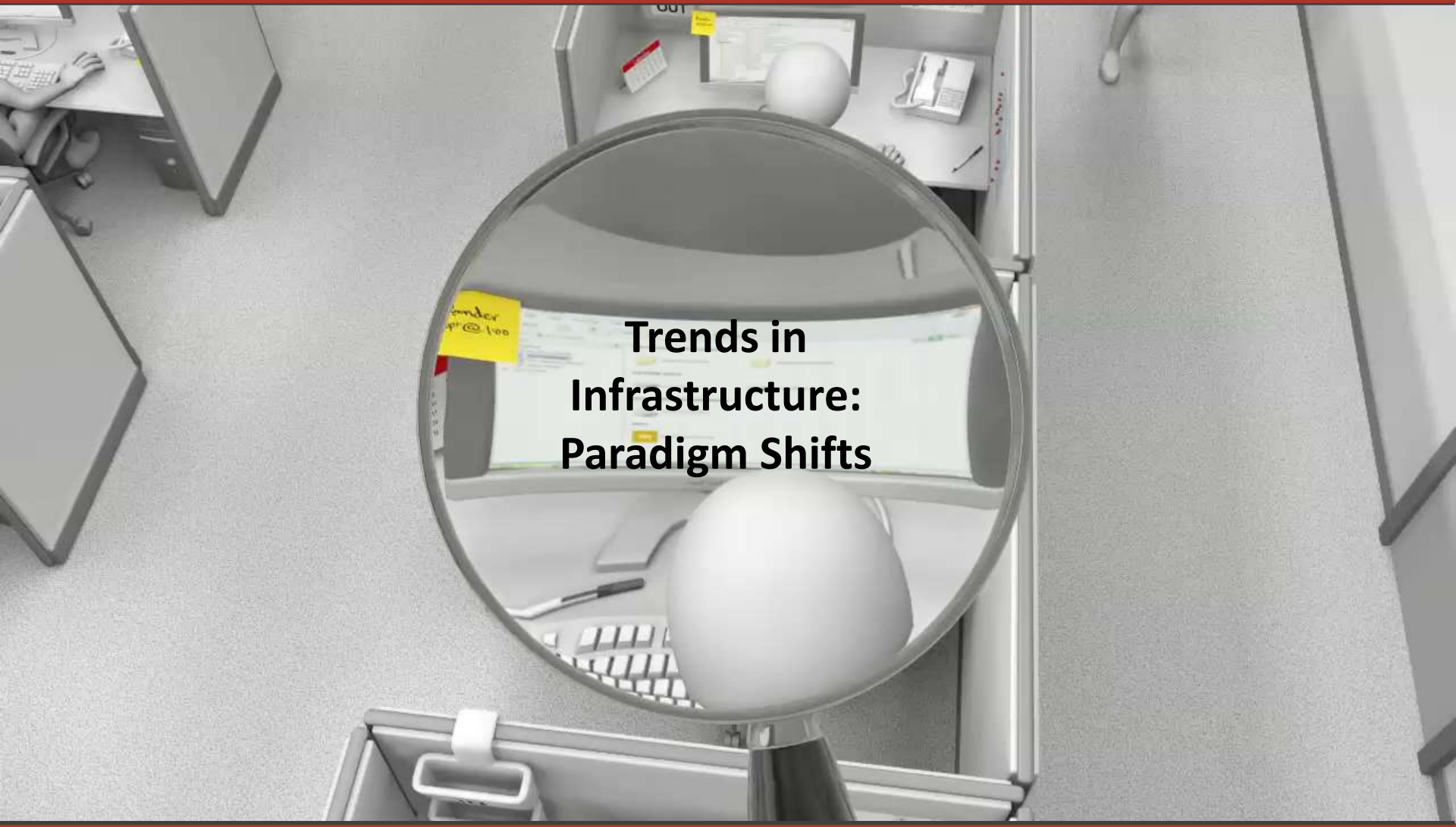

Tell me and I'll forget
Show me and I may remember
Involve me and I'll understand

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STKI Summit 2012

Pini Cohen
VP and Senior Analyst

We will present data on products and vendors:

1. Israeli vendors rating – state of the current market focused on the enterprise market (not SMB)
   - X – Market penetration (sales + installed base+ clients perspective)
   - Y – is X plus localization, support, development center, number and kind of integrators, etc.
   - Worldwide leaders marked, based on global positioning
   - Vendors to watch: Are only just entering Israeli market or making a big change so can't be positioned but should be watched
   - Represents the current Israeli market and not necessarily what we recommend to our clients
2. Products and selected resellers / implementers
   - The location within the list is random

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We will present data on products and vendors (cont.)

3. Selected installations of products – projects in different stages , production,implementation, after decision…

4. Service providers that are used by users . I asked users – "which SI do you use in this category" and counted the result.

5. Analysis by international and Israeli analysts
   - This complete information (1 to 5) should be used together, combined with the specific circumstances of each case when making a decision

This subjective chart is the result of our objective research

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מיה האינטגרטור (נותן שירות – לפעמים אפילו יצרן כשעובד ישירות) שעובד אצלך בתחום הגיבוי:
__ אמת מחשוב_ האם תרצה להמליץ עליו? כן_

איזה יצרן מספר 1 לדעתך בישראל בתחום האחסון highend- _ חברת EMC___ מי הוא מספר 2 בישראל ___ HDS__

מי הם היצרנים ששיכים לדעתך לקטגוריה של highend בתחום האחסון
_____ IBM,HDS,EMC,NETAPP___ ?

איזה יצרן מספר 1 לדעתך בישראל בתחום האחסון SAN - midrange חברת EMC__ מי הוא מספר 2 בישראל _ NETAPP

איזה יצרן מספר 1 לדעתך בישראל בתחום האחסון NAS _ חברת NETAPP _____
מי הוא מספר 2 בישראל ____ חברת EMC_____

האם לדעתך יש צורך להפריד במיצוב בין NAS ל- SAN או שעדיף למצב רק קטגוריה אחת שהיא

משתמשי PC יש בארגון (לחלקם יש כמה devices): ____300__ כמה PC יש בארגון (כולל thin clients) _____400_____
דל הצוות שמטפל בהם (בניית images , וכד') לא כולל טכנאים שמגיעים לשטח _____1_____
טכנאים שמגיעים לשטח מטפלים ____2_____
דל ה-service desk הטלפוני _____1_____
האינטגרטור (נותן שירות – לפעמים אפילו יצרן כשעובד ישירות) שעובד אצלך בתחום ה-PC : _____כלנית____ האם תרצה להמליץ עליו? __OK___
יצרן מספר 1 לדעתך בישראל בתחום המחשבים השולחניים _____DELL_____ מי הוא מספר 2 בישראל _____HP_____
יצרן מספר 1 לדעתך בישראל בתחום המחשבים הניידים _____DELL____ מי הוא מספר 2 בישראל _____HP_____

<u>ם מסדי הנתונים</u>
DBA תשתיתיים יש בארגון ___2_____
ה אפליקציות שונות הם מטפלים (אפליקציות בייצור כאשר מניחים שהם מטפלים גם בסביבות הבדיקות, פיתוח וכד') _____50+_____
האינטגרטור (נותן שירות – לפעמים אפילו יצרן כשעובד ישירות) שעובד אצלך בתחום ה- DBMS: ___גלסהאוס_____ האם תרצה להמליץ עליו? ___OK__

<u>ם הממשקים\ETL\SOA</u>
ממשקים\שירותים יש בארגון ___מאות עם FTP + עשרות מבוססי WS_____ בגלל הבעייתיות בהגדרה של "שירות" תן דוגמה לשירות ____לגבי FTP העברת תנוע
ות CRM ומנויים. _____
דל צוות הממשקים\SOA בארגון____0_____
האינטגרטור (נותן שירות – לפעמים אפילו יצרן כשעובד ישירות) שעובד אצלך בתחום הממשקים\ SOA: _____ האם תרצה להמליץ עליו? _____
יצרן מספר 1 לדעתך בישראל בתחום הקישוריות בישראל (SOA EAIוכד') _____ מי הוא מספר 2 בישראל _____
יצרן מספר 1 לדעתך בישראל בתחום ה- ETL _____ מי הוא מספר 2 בישראל _____

<u>ם השליטה והבקרה (שו"ב)</u>
דל צוות השו"ב (הצוות שאחראי על קינפוג ותפעול סביבת השו"ב) בארגון_____1____
האינטגרטור (נותן שירות – לפעמים אפילו יצרן כשעובד ישירות) שעובד אצלך בתחום השליטה והבקרה: ___מלמ נטקום_____ האם תרצה להמליץ עליו? ___OK__

Ratio Analysis:

- 25% percentile
- 50% percentile = median
- 75% percentile

		Sorted Metric	Metric
		36	57
		43	36
		50	117
		50	438
		57	60
		60	175
		60	150
68.6	**25% percentile**	71	143
		100	120
		100	50
		109	250
		117	125
		117	280
		120	60
120.0	**50% percentile = Median**	120	200
		125	117
		125	100
		143	164
		150	125
		164	600
		175	192
178.1	**75% percentile**	188	71
		192	120
		200	50
		250	188
		280	43
		438	109
		600	100

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Agenda

Major paradigm shifts

Development and SOA

ESM BSM CMDB

DBMS and DATA

Platforms – Servers

Clients

Storage

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Development Middleware Mini Agenda

- Maturity Model 2012
- Java vs. .NET revisited
- PAAS
- From STKI's Round Tables – project estimation, testing
- Mobile Development

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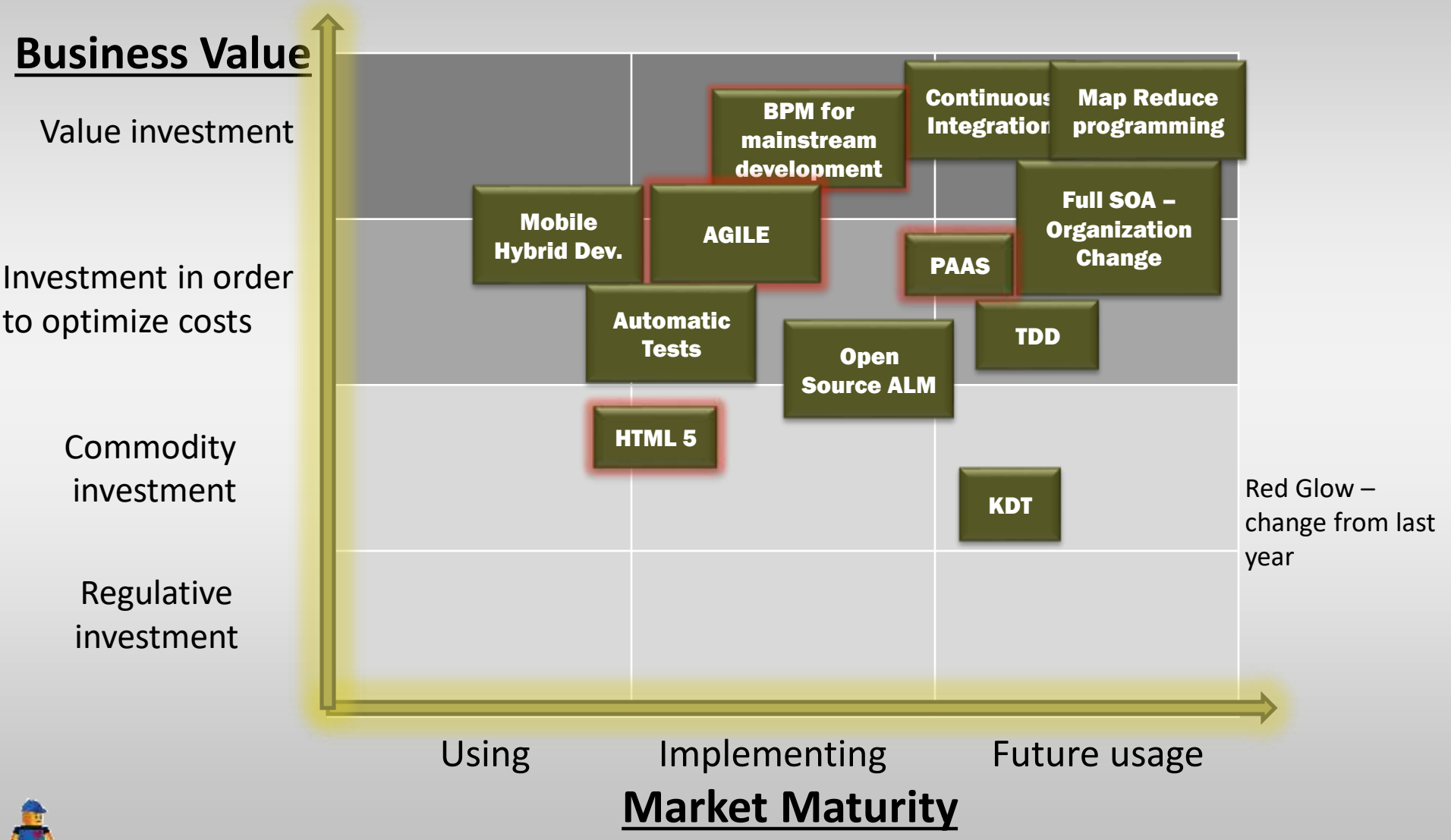
Technology Maturity Model – Development 2012



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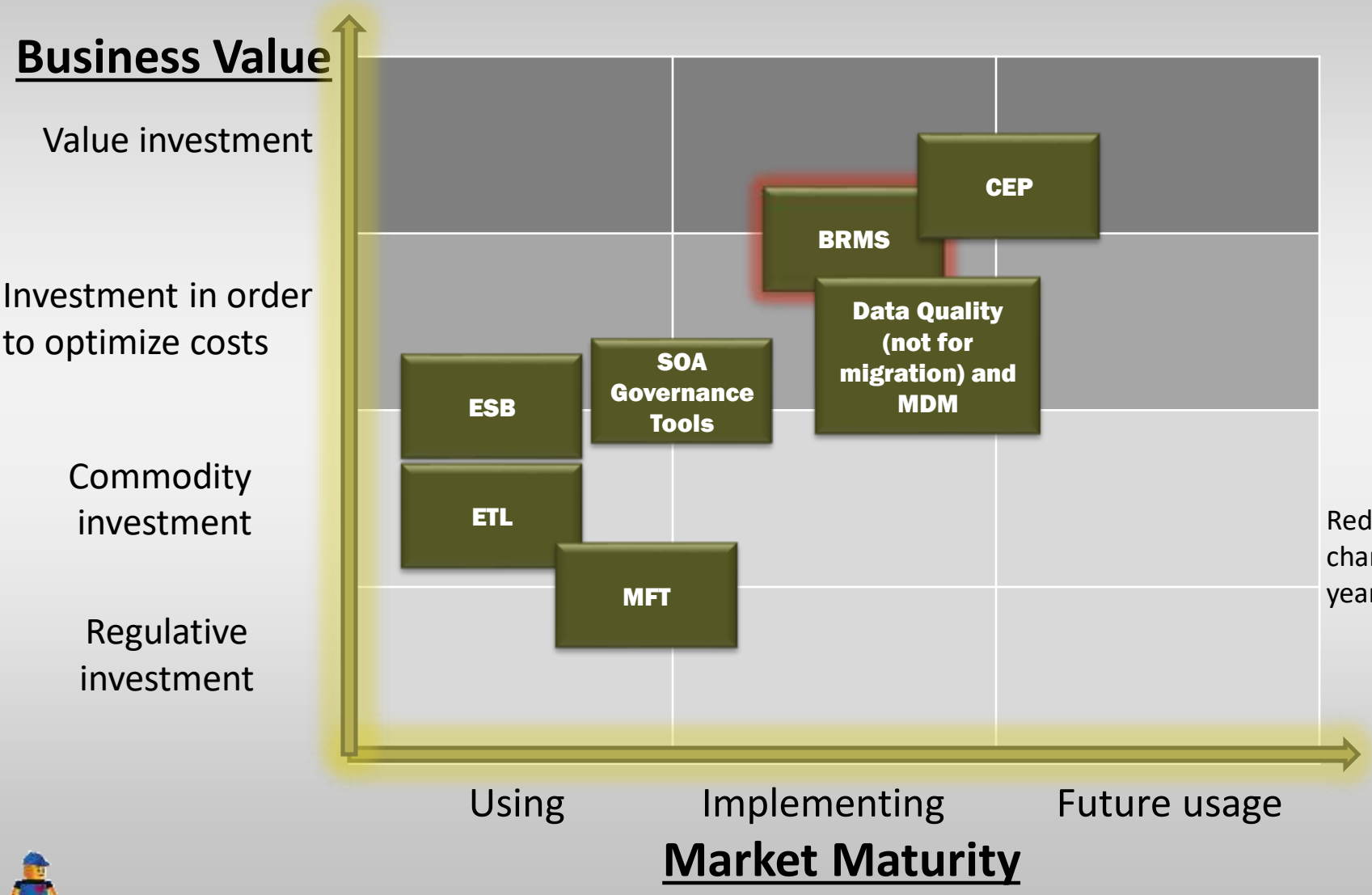
Technology Maturity Model – Middleware 2012



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Development Languages

- Tiobe Index (counting hits of the most popular search engines)

Position Feb 2012	Position Feb 2011	Delta in Position	Programming Language	Ratings Feb 2012	Delta Feb 2011
1	1	=	Java	17.050%	-1.43%
2	2	=	C	16.523%	+1.54%
3	6	↑↑↑	C#	8.653%	+1.84%
4	3	↓	C++	7.853%	-0.33%
5	8	↑↑↑	Objective-C	7.062%	+4.49%
6	5	↓	PHP	5.641%	-1.33%
7	7	=	(Visual) Basic	4.315%	-0.61%
8	4	↓↓↓↓	Python	3.148%	-3.89%
9	10	↑	Perl	2.931%	+1.02%
10	9	↓	JavaScript	2.465%	-0.09%
11	13	↑↑	Delphi/Object Pascal	1.964%	+0.90%
12	11	↓	Ruby	1.558%	-0.06%
13	14	↑	Lisp	0.905%	-0.05%
14	26	↑↑↑↑↑↑↑↑↑↑↑↑	Transact-SQL	0.846%	+0.29%
15	17	↑↑	Pascal	0.813%	+0.08%
16	22	↑↑↑↑↑↑	Visual Basic .NET	0.796%	+0.21%
17	32	↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑	PL/SQL	0.792%	+0.38%
18	24	↑↑↑↑↑↑	Logo	0.677%	+0.10%
19	16	↓↓↓	Ada	0.632%	-0.17%
20	25	↑↑↑↑↑	R	0.623%	+0.06%

Programming Language	Position Feb 2012	Position Feb 2007	Position Feb 1997	Position Feb 1987
Java	1	1	4	-
C	2	2	1	1
C#	3	8	-	-
C++	4	3	2	7
Objective-C	5	44	-	-
PHP	6	4	-	-
(Visual) Basic	7	5	6	5
Python	8	7	27	-
Perl	9	6	5	-
JavaScript	10	9	25	-
Lisp	13	16	17	3
Ada	17	17	15	2
COBOL	34	18	3	10

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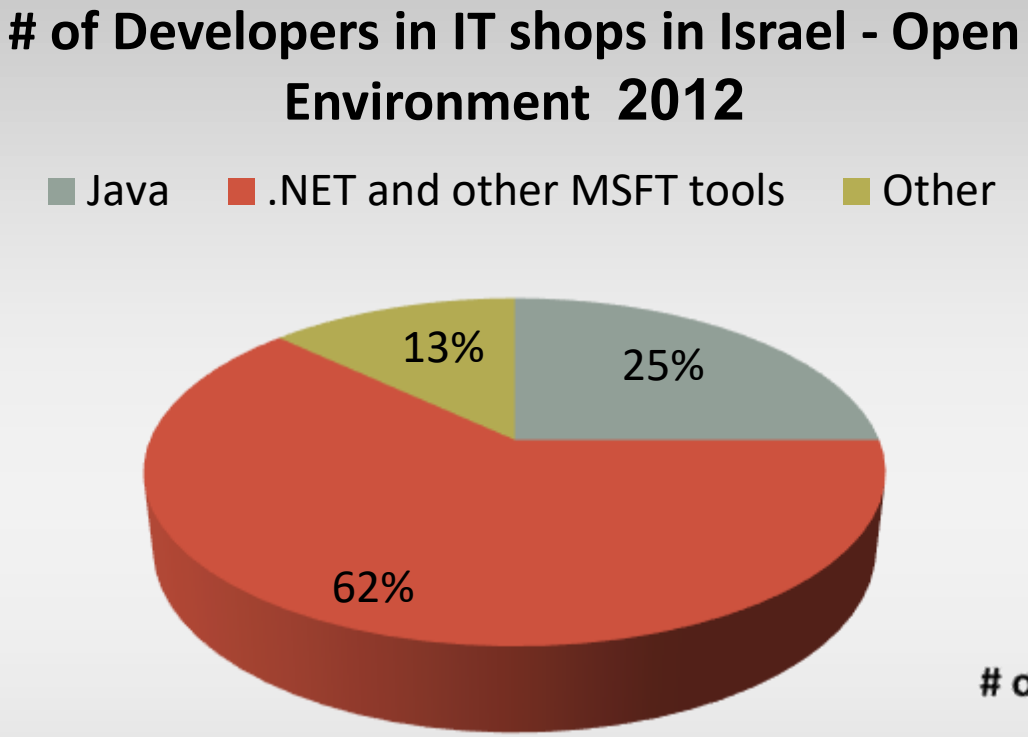
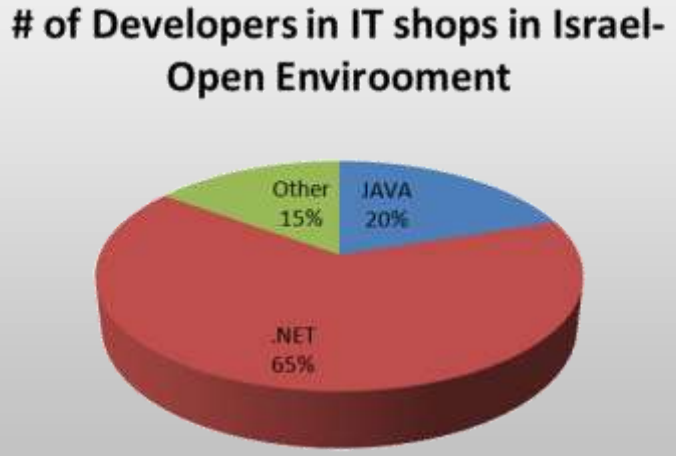
Meanwhile… in the Holy Land





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JAVA vs. .NET revisited

- Java has more options than .Net. This means that Java organizations have to invest more in standards, guidance, architecture, and software infrastructure.
- A well-known pain point of .Net, and Microsoft solutions in general, is backward compatibility
- Both Java and .NET will require significant effort when moving to newer versions. .NET in the code (backwards compatibility). Java in the Infrastructure level.
- For straight forward projects (example basic portal, basic CRM) .NET\Microsoft technologies is the fastest way. For complex projects the productivity advantage of Microsoft is not obvious (when Java capabilities already exist).

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JAVA vs. .NET revisited (cont.)

- Java developers are hard to get.
- Top .NET developers are as hard to get as top Java developers.
- The Java vs. .NET requirement gap is decreasing
- Large IT shops must maintain good development\architecture capabilities in both Java and .NET .
- .NET still rules in Israeli IT shops but with less dominance.

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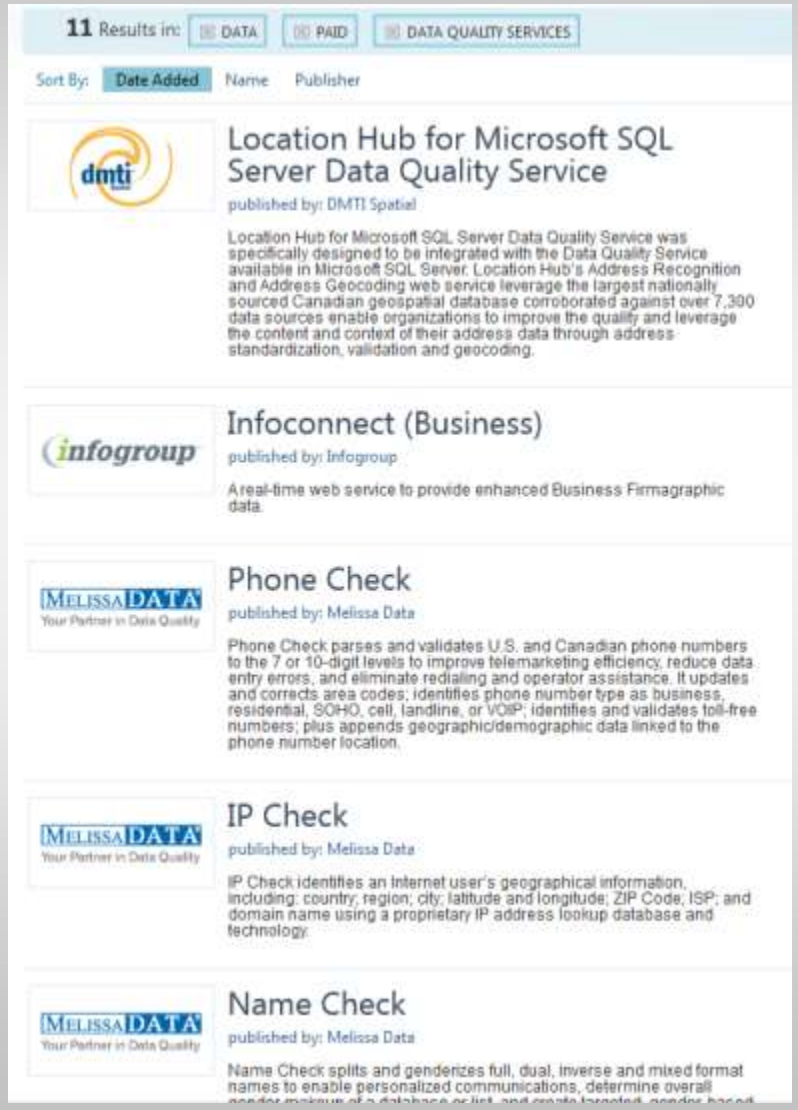
PAAS development

- PAAS is starting to gain momentum. Examples:
  - Azure selected Israel apps: Mealway, ProperTime, Youcos, EggZibit, BugAid, E-Z-Safe, etc.
  - Force.com selected Israel clients : Zim, Tower Semiconductor, Eliyahu Finance, Ministry of Health , Israeli Barcode Association



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PAAS development is not 100% standard

- Example: Microsoft CRM

Workflow

Call out to external systems from your workflow rules. Create custom workflow activities that can be used by your workflow rules. In the previous version, this feature was known as workflow .NET assemblies. For more information, see Workflow.

	On-premise	Hosted (IFD)	Online
Declarative workflows using workflow tools in Web application	Yes	Yes	Yes
Custom workflow activities (.NET Assemblies)	Yes	Partner specific	No

Web Services

Microsoft Dynamics CRM 4.0 provides a dynamic Web service interface for applications to use to access and manipulate platform data as well as interact with platform services. These services enable ISVs to write applications using Microsoft Visual Studio or other developer tools by simply referencing the platform Web service. For more information, se the topics for each Web service shown in the following table.

	On-premise	Hosted (IFD)	Online
Discovery Web service	Yes	Yes	Yes
CrmService Web service	Yes	Yes	Yes
MetadataService Web service	Yes	Yes	Yes
Deployment Web service	Yes	Yes	No

Source: http://msdn.microsoft.com/en-us/library/dd393297.aspx

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Recommended!

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STKI RT - Project Estimation

- Project estimation is done by the developer team leaders before the “go\no go” stage of the project
- Waiting for the “Design” part is not acceptable since Design might take up to 30% of project cost
- No formal methods are used (Cocomo, Function Points, etc.)
- PMO vs. Development. The winner is: Development! Generally, PMO’s can not argue with development about estimation that is too high

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Agile Software Development

- Is considered as a concept “worth trying” in most development organizations

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STKI RT – Quality and Testing

- Different kind of bugs:
  - Technology (will cause blue screen)
  - Business (the CRM representative can sell giving too much discount)
- Agile Software Development is changing the traditional testing
- Best Practice : the “middleman” who sits and moderates the QA and the development conflicts
- TDD (Test Driven Development) is seldom used but gains interest.

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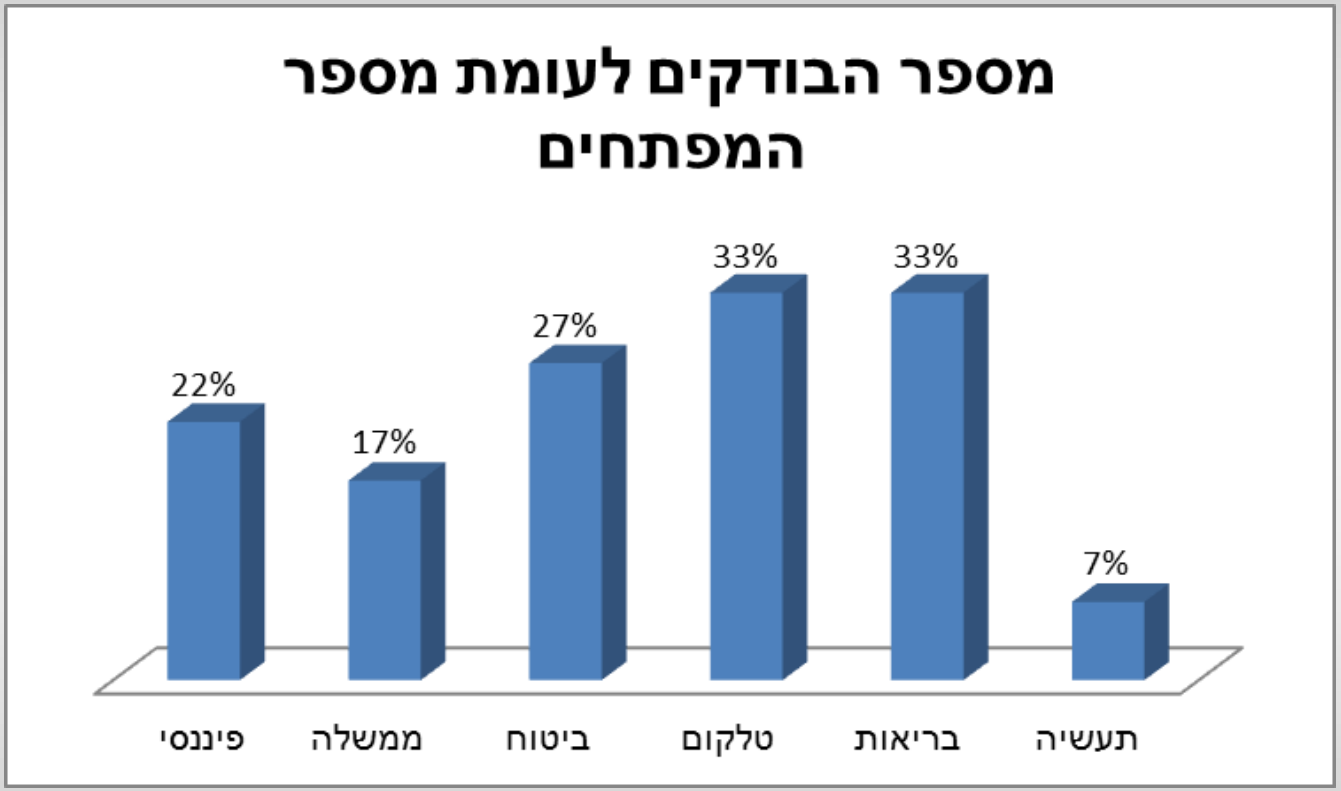
STKI RT – Quality and Testing

- Number of QA personal vs. Developers



- However, #QA/#Developers is not the same as QA Budget / Development Budget

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STKI RT – Quality and testing Israeli metrics

- Actual metrics used by clients:
  - DDP – Defect Detected Percentage is 10% (one in each 10 bugs is discovered in Prod)
  - Halt Testing – stop the test procedures if more than 10 severe bugs are discovered (for project larger than 100 days)
  - Number of bugs discovered in Prod vs. development days is 0.22 (means for each 100 develop days – 2.2 bugs in production)
  - Number of priority 1 bugs per module per month – 1 or 2

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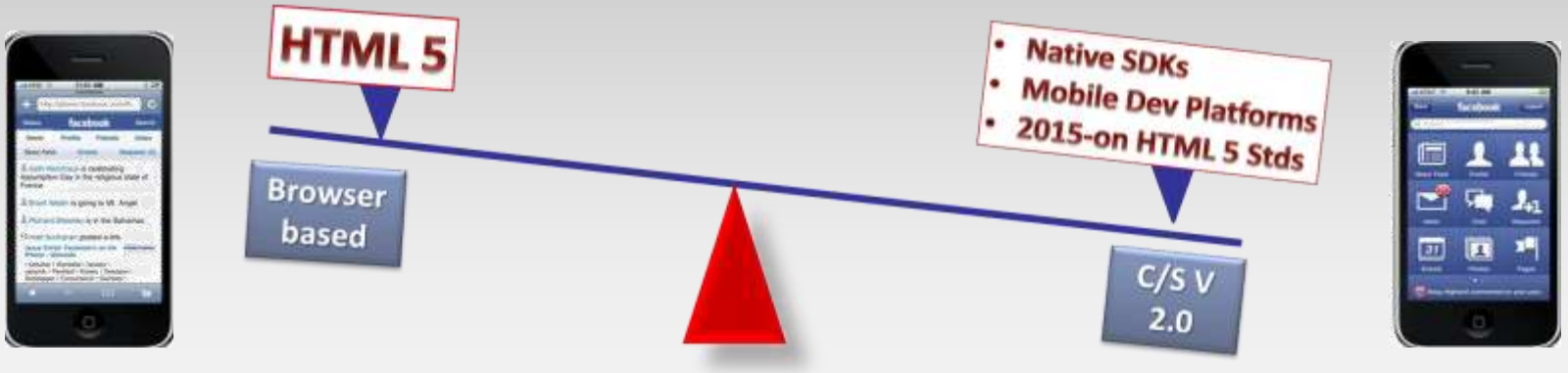
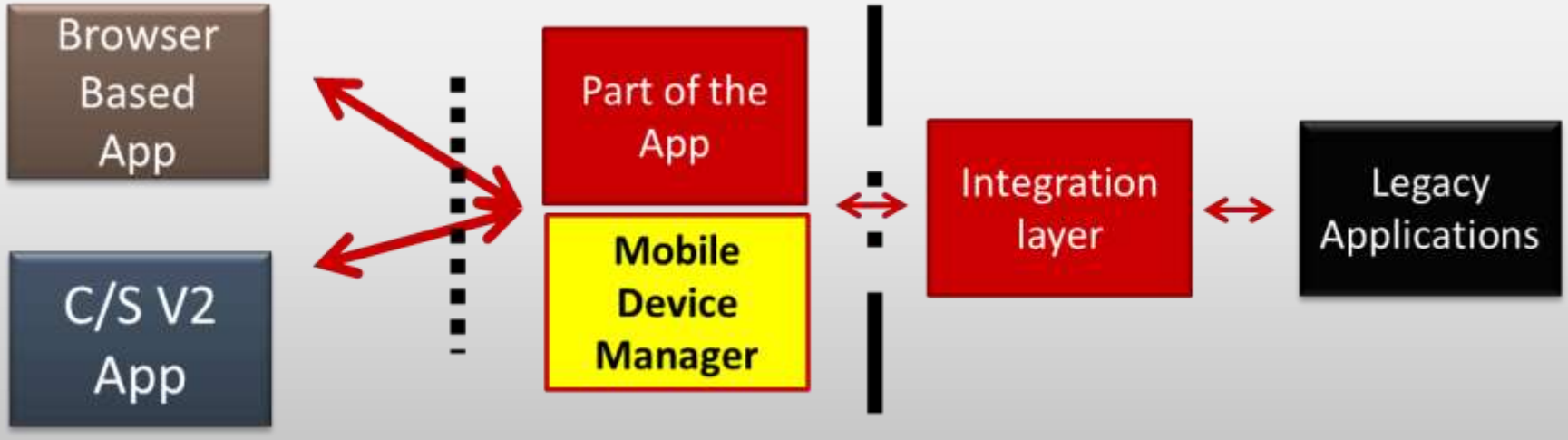
Mobile Development - two types of “personal computing”





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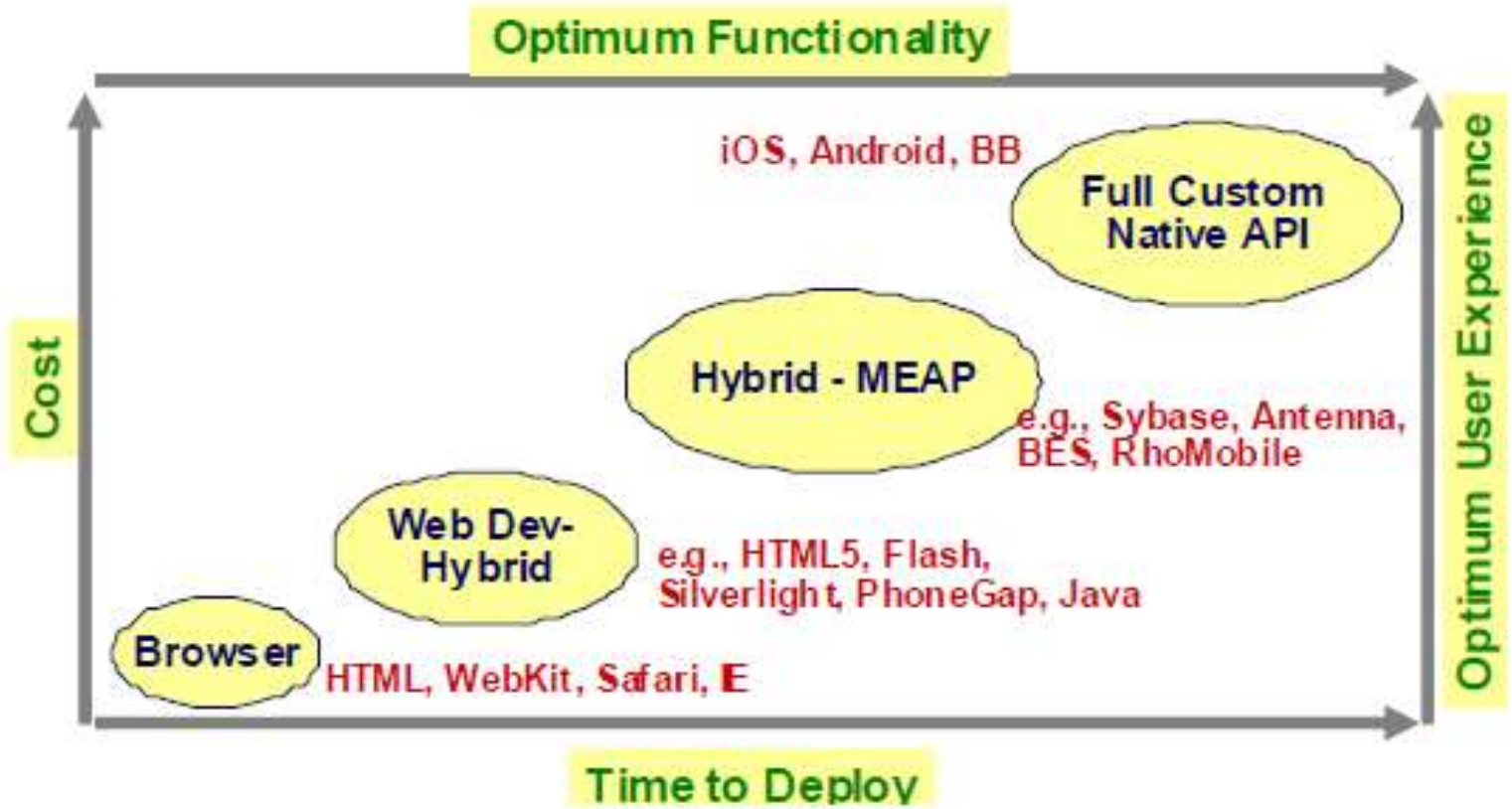
The different mobile development options



Source: J.Gold Associates, LLC.

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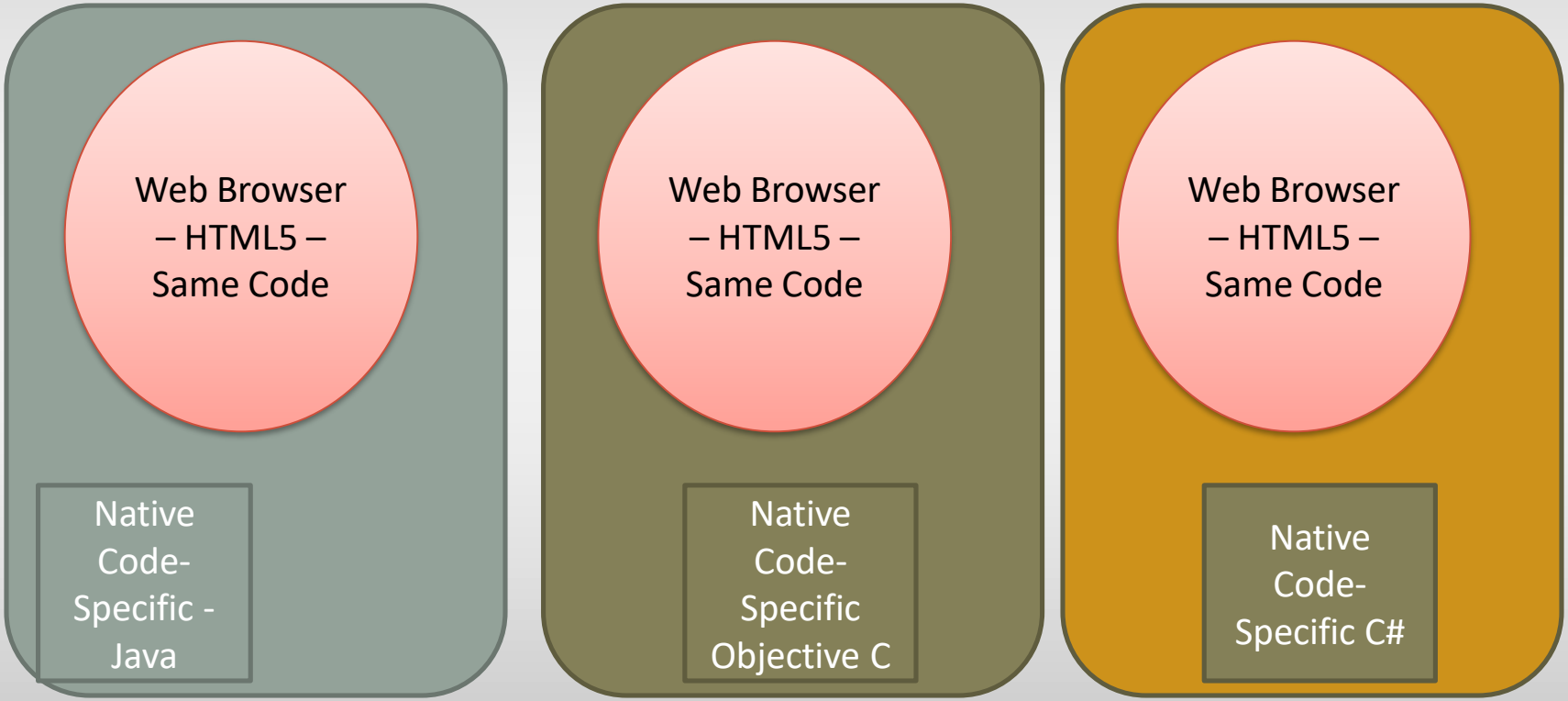
Hybrid Application Development



IOS

Android

WindowsPhone

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iPhone and iPad in Business – SW distribution

App Store

In-house

Custom B2B

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Apple's App Store: Reviewed for user experience

- Largest collection of curated apps
- An app for any task
- Apps reviewed by Apple
- Easy install for users
- Volume purchase for paid apps

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Apple's App Store: Reviewed for user experience

- 12.3 Rejection from Apple:
  - "the experience it provides does not differ significantly from the general experience of using Safari, as required by the App ".

פיני כהן 12.01.03 | 11:30

כלוב הזהב של אפל - טוב או רע?

גורם מסויים יותר אפליקציה המעניקה ללקוחותיו שירותים סלולריים, משתמשי האנדרואיד נהנים ממנה, בעוד אפל קובעת כי האפליקציה אינה טובה מספיק למשתמשי iOS. האם זהו תפקידה להחליט עבורנו דבר כזה?

Hardware | Mobile

| לדף הבית של TheMarker IT |

חיית השימוש בטכנולוגית הניידות של אפל - כלומר iPad-ו iPhone - היא חוויה שונה מחיית השימוש במכשירים ניידים כגון למטופים או מכשירי אנדרואיד. מדובר בחוויה מוקצית יותר מחד, אך פגורה יותר מאידך - מה שזיכה אותה בכינוי "כלוב הזהב".

לאחרונה נתקל ארגון מומחי במגבלה של שימוש בסביבה הטכנולוגית של אפל. מדובר על ארגון אשר פיתח אפליקציה ללקוחותיו ב-iPhone. האפליקציה היא אפליקציה פשוטה יחסית - לקוח ניגש לחשבון שלו, מבקש לראות סא מסויים של נתונים ומקבל אותם בצורה טבלאית. ביצוע פעולות בתחום זה בעיתי בשל מגבלות רגולציה, ולכן עיקר הפונקציונליות של האפליקציה היא בתצוגת מידע רלוונטי במספר מימדים הקשורה לחשבון הלקוח. הארגון פיתח את האפליקציה בטכנולוגיה הידועה בשם טכנולוגית פיתוח היברידית למכשירים ניידם (hybrid mobile application). בטכנולוגיה זו משתמשים ביכולת ההיברידית של המכשיר הנייד לפתח דפדפן ללא שורת הכתובות ולבצע באמצעותו את רוב הפעולות הנדרשות - הצגת אזהרת טקסט, הצגת תמונות וכד'. במכשירי אפל מדובר על שימוש במנוע של דפדפן הספארי שנקרא UIWebView. שאן פעולות אשר לא ניתנות לביצוע דרך הדפדפן ואן מתבצעות על ידי החלק הבסיסי של האפליקציה (זיהוי בכינוי כחלק ה-native). במקרה זה פותחה יכולת של עדכון הלקוח בצורה יזומה (push notification), כך שכאשר יש עדכון חשוב (לדוגמה: מעבר למצב של חריגה באשראי) מקבל המשתמש הודעה במכשיר המציעה לו לפתוח את האפליקציה.

היתרון בשימוש בטכנולוגית הפיתוח ההיברידית למכשירים ניידים חכמים היא האפשרות להשתמש בחלק מקוד האפליקציה בכל המכשירים הניידים. זאת מן הטעם שקטע הקוד שנמצא בדפדפן כתוב ב-html5, הזהה בין כל הפלטפורמות - אפל, אנדרואיד, מיקרוסופט וכד'. זאת לעומת פיתוח native, אשר מחייב כתיבה מחדש של כל האפליקציה בנפרד לכל טכנולוגיה של מכשיר חכם.

עבכן, הלקוח כתב את האפליקציה והעביר אותה ל-appstore בכדי שיוכל להציע את האפליקציה ללקוחותיו. השקת האפליקציה לסביבה הניידת היתה אמורה להיות מלווה בקמפיין שיווקי מהודר, אולם המתבר ששלטונות אפל דחו את האפליקציה בטענה שמדובר על אפליקציה שאינה מספיק עשירה. ליתר דיוק, האפליקציה לא הועלתה בגלל סיבה 12.3, שעיקרה:

the experience it provides does not differ significantly from the general experience of using Safari, as required by the App Store Review Guidelines

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App Store

In-house

Custom B2B

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In-house

- Unique for your business
- Leverage your in-house expertise
- You own the code
- Not reviewed by Apple
- Easy distribution to employees

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App Distribution

- Simple and flexible
- You control the distribution
- URL-based delivery method
- Users tap to install

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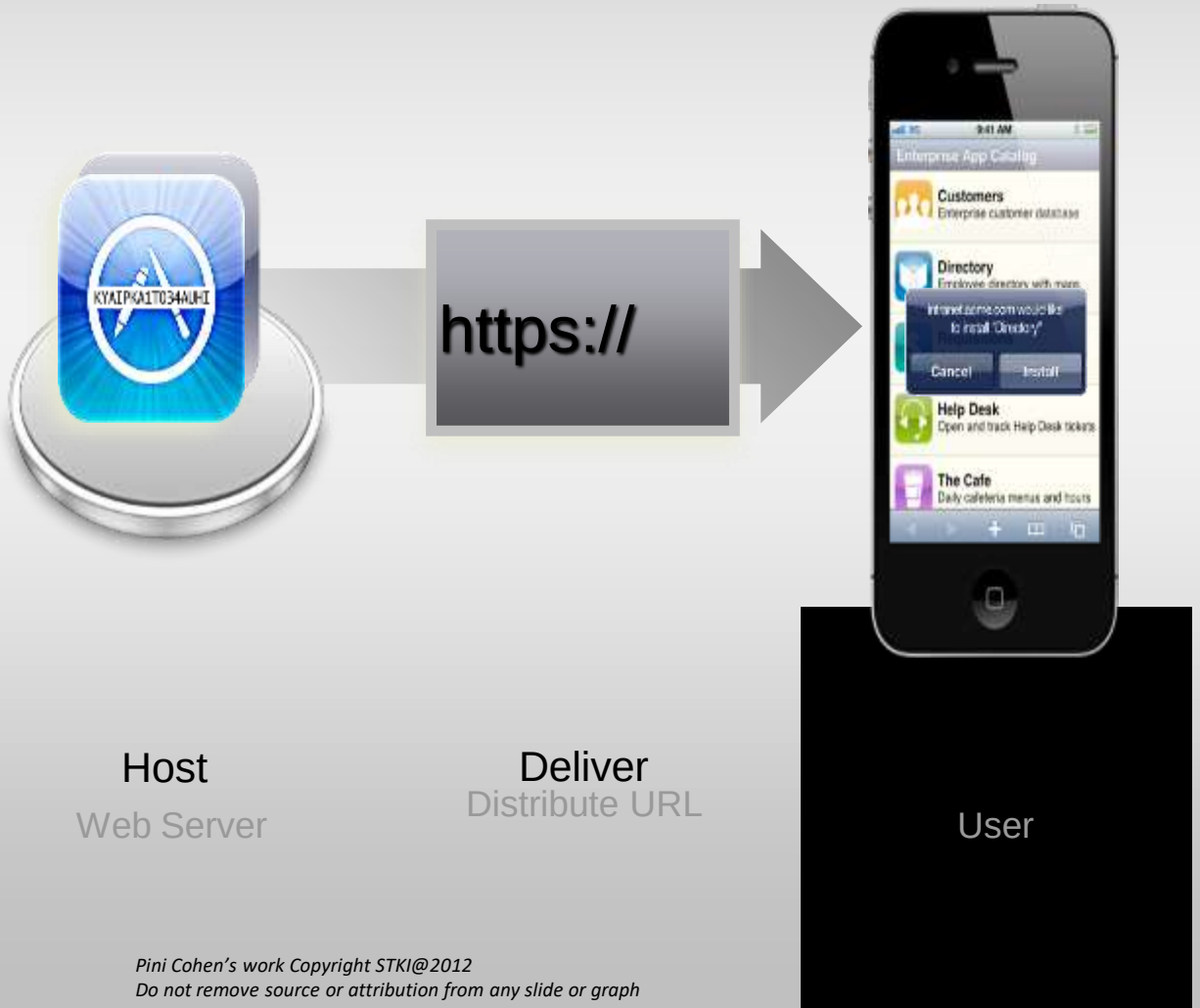
How it Works



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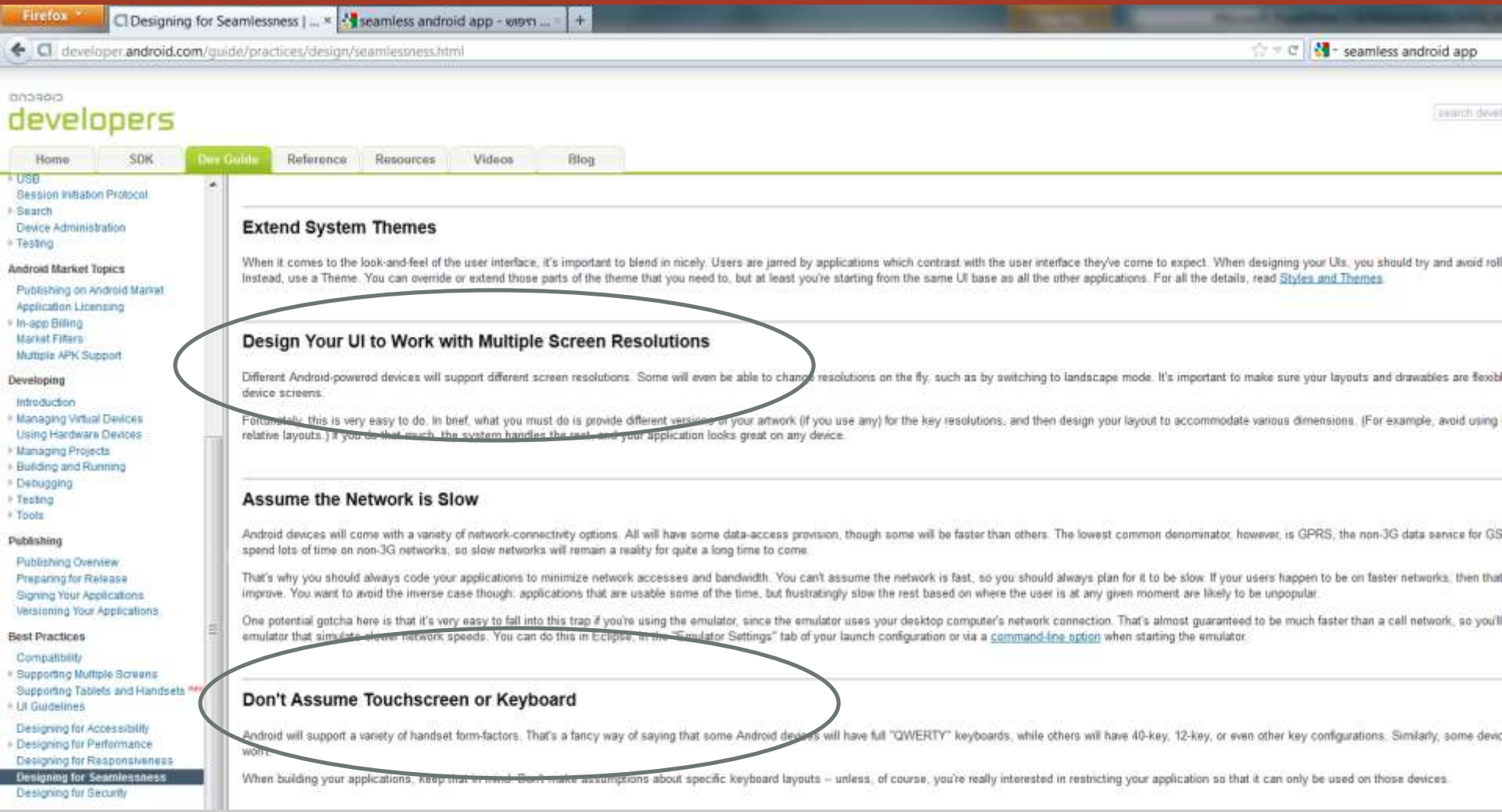
Android development issue– fragmentation of devices means fragmentation of development



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Selected Installations 2011-1Q2012

Partial List of selected wins –SOA\ESB

IBM BPM – Bank Leumi (Lombardi), Teva (Lombardi), Phoenix (Lombardi)

IBM ILOB (BRMS): Isracard, 888

IBM Data Power: MOD, Isracard, Bank Leumi, Leumicard, Social Security, Menorah , 888, Ministry of Education, Israel Standard Istitute

IBM SOA Governance: Amdocs

Tibco: Ribua Kahol (Alon Group), Better Place (IT),

Tibco CEO: Partner

Tibco BPM: Teva (upgrade), Partner(upgrade), Prime Minister (upgrade) , Haifa Municipality (update)

RTI (Real Time Integration – DDS standard – represented by Matrix): MOD

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Selected Installations 2011-1Q2012

Partial List of selected wins –SOA\ESB

- Oracle SOA Suite (ESB, etc.): Mirs, Bank Jerusalem, Visa CAL (upgrade), Metronit, Plasan Sasa (upgrade), RH, DSPG(upgrade), Ministry of Health, MOD(upgrade), Harel (including BPM) (upgrade), Amdocs (project), Malam Salary Services.
- Magic Ibolt – Poalim (Shuk Hahon), Multilock, Clalbit, ATS
- SoftwareAG - SOA – Bituach Leumi, Clal BPM(upgrade), Maccabee Health, Leumi Bank (SOAG), Bezeq (SOAG), Poalim (SOAG – upgrade)

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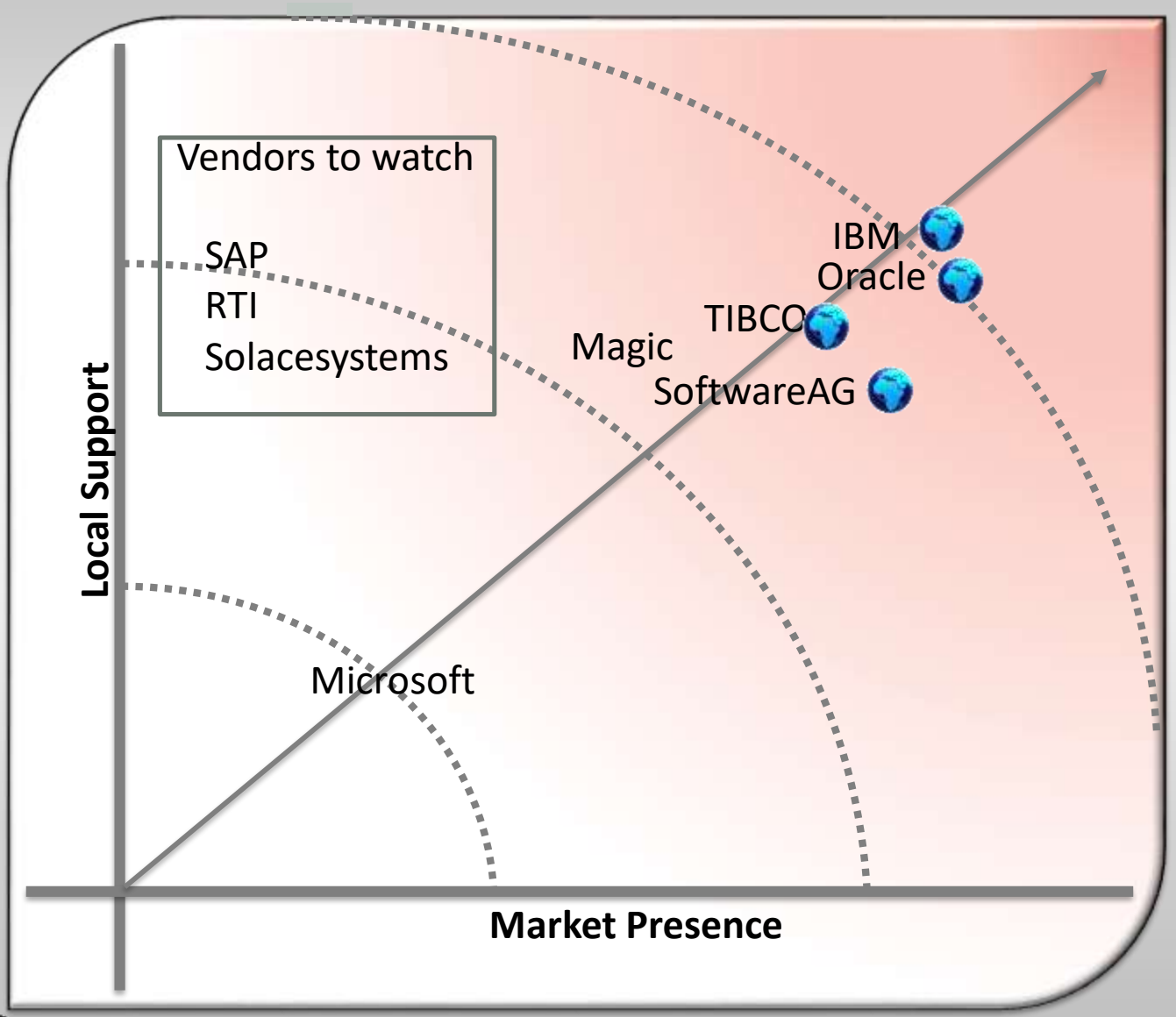
SOA infrastructure - Israeli Market Positioning 1Q12



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EAI\SOA Support Ratios

- Number of Services/Interfaces supported by Integration/ESB/SOA team FTE
  - "Interface" 1:1 or more. Including MQ.
  - "Service" used by at least 2 applications
- Large variety – definition of service\interface

Per FTE	# of Interfaces	# of Services
25 percentile	54	10
Median	**70**	**19**
75 percentile	384	92

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STKI on APP Development and Middleware

- Experiment with PAAS now
- Your DMZ application is ideal candidate for PAAS
- Continue with Agile gradual adoption
- Start “playing” with new development paradigms (MapReduce). Soon it will be like writing “for next”.
- Automation Automation Automation in testing!
- Emphasis on Mobile application development. This will be the mainstream development

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Agenda

Major paradigm shifts

Development and SOA

ESM BSM CMDB IT operations

DBMS and DATA

Platforms – Servers

Clients

Storage

Source: http://astonguild.org.uk/files/NEW_MENU_FRONT_RGB%5B1%5D.jpg

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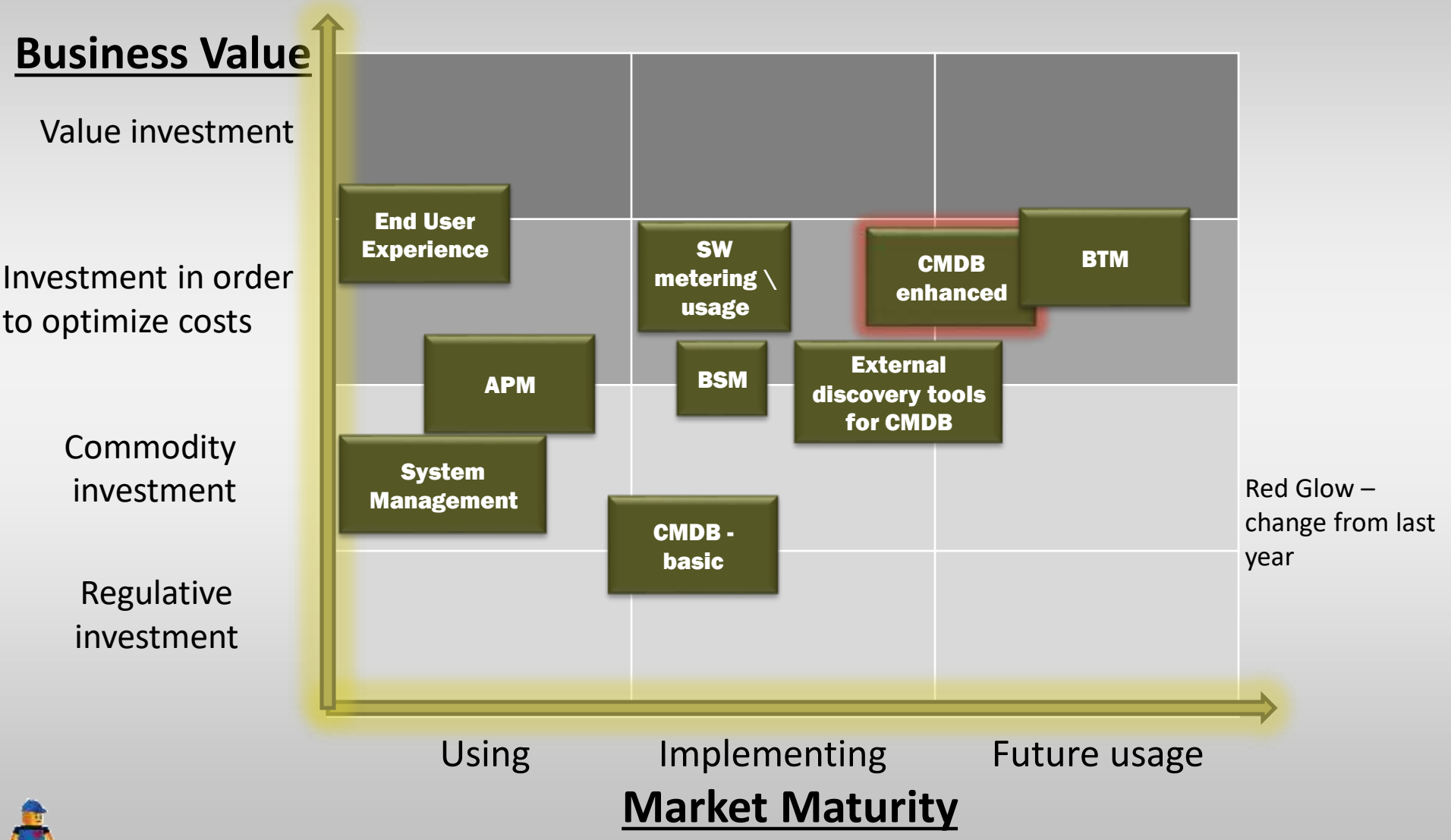
Technology Maturity Model – Enterprises System Management CMDB. 2012



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Old slide- still relevant - Enterprise System Management Project Failures

ESM projects are the most difficult IT projects to maintain.

This is why ESM projects fail

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The different layers of ESM (Enterprise System Management)

- Traditional system management – agent that reports to the center
  - Physical map
  - Logical map
- End User Experience tools
  - Real
  - Synthetic
- BTM - Correlation\Transaction management tools (sophisticated sniffing correlated to applications\tools)
- Specific tools /APM (Application Performance Management). Examples: for SAP, for DBMS, for .Net, for JAVA, for networks , etc.
- Central Console – Manager of Managers
- CMDB – auto discovery (with relations) and repository

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End User Experience (EUE)

- The issue with EUE is that in many cases changes in application\ infrastructure are not related to EUE and therefore CAB's tend to ignore EUE in change request flow
- EUE performance is tricky. For example how do you measure the performance of Outlook? Some of the changes are synced with delay (because of Cashed Mode).

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End User Experience (EUE) “Real” vs. “Synthetic”

- Synthetic EUE enables to get alerts before the users activate the applications
- However, Synthetic EUE fires transaction in the actual systems and the transactions must be ignored at the “apps\dbms” level and this is very costly (one transaction can update 10 applications and more…)
- Also Synthetic EUE might cause more traffic than the actual usage of the application

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Several Levels of CMDB discovery

- Infrastructure CI's : Servers, DBMS, SW tools (Exchange, ISS, etc.), Storage, Switches, etc.
- Infrastructure discovery needs some manual data entry: who is the CI owner, etc.
- Service discovery template.

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CMDB CI reconciliation \data quality

- Notification about a server came from several sources:
  - “Neptun “ from the monitoring agent
  - “Neptun_prod” from the CMDB discovery engine
  - “SAP APP SERVER 1” from the Asset management agent
  - “neptun” from the DBMS monitoring agent
- How can we identify that it is the same server (or is it not… maybe the last “Neptun” is from the “Dev environment”?!)

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CMDB discovery engine gives detailed information:

Services
service display name
service key name
service logon as
service path
service startup
Open Ports
port
protocol
process name
process path
Communication Relationships
application name 1
application name 2
Netstat Communication Relationships
process name 1
executable path 1
process name 2
executable path 2

Hardware Details from BP(For all OS)
BIOS-Firmware Date
BIOS-Firmware version
CPU Quantity
cpu speed
CPU Type
host name
manufacturer
Model
Patch Level
physical memory
serial number
System GUID
Total Disk size
Storage Details from BP(For all OS)
Number of Logical Drives
Number of Physical Drives
Total Disk size
Memory
memory total slots

Server
host name
manufacturer
model
serial number
windows domain name
nis domain name
bios name
bios manufacturer
bios serial number
snmp system name
snmp description
ipv4 address
os name
os version
mac address
bios firmware version
architecture
cpu speed
number of cpus
created by
creation time
os family
refresh time
discovered time
ipv6 address
server_uuid
business process
modification time
status
Launch-in-context URL

Network Details from BP (Windows)
Cluster Status
Clustered
Virtual Relationships
parent
child
relationship type
Communication Relationships
ipv4 address 1
ipv6 address 1
port 1
protocol
relationship type
ipv4 address 2
ipv6 address 2
port 2
CTA Communication Relationships
attribute name
attribute value
Relationship Traffic Summary
start time
stop time
packet count
Communication Relationships - Configuration
component uuid
relationship type
Containment Relationships
Parent
child
relationship type

Source: ca technologies

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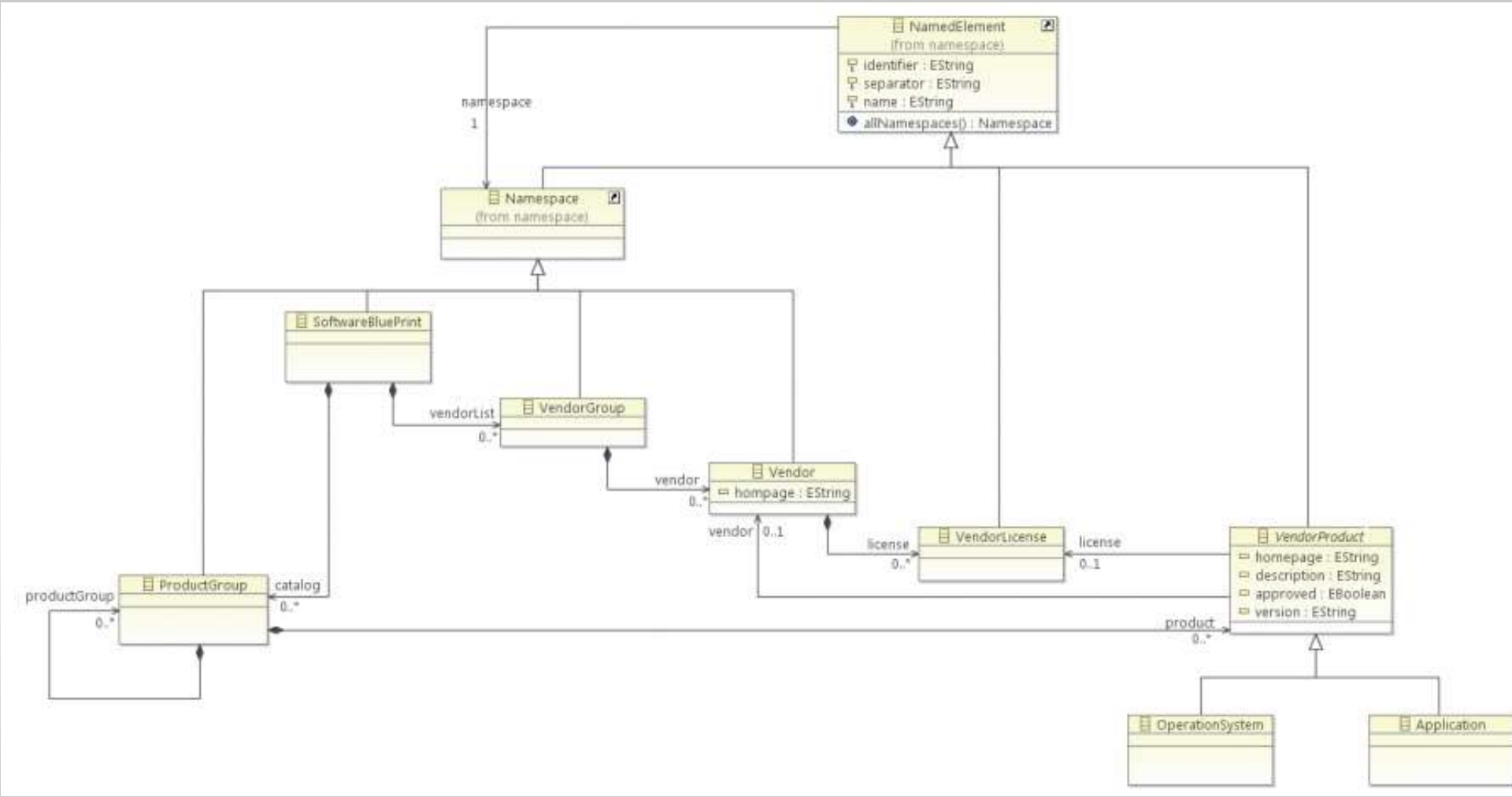
CMDB Blueprint \ Scheme



Source: http://www.codefun.org/wiki/lib/exe/detail.php/projects:ecore:cmdb:blueprint.png?id=projects%3Aecore%3Acmdb%3Ablueprint

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What clients currently get from CMDB (auto-discovery) project?

- Before stopping server\resource checking if it is not used by "unknown" application
- When error happens checking at the CMDB level "what has changed from yesterday"
- Updating the logical ESM maps automatically from the CMDB. If I add new server to the SAP Application Server – it will be shown automatically in the corresponding ESM logical map of "SAP system"
- All kinds of asset reports- “who is using dll ver. X” , “where is AIX ver. X installed. Helping compliance\renewing contracts, insurance reports, ets.

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What clients currently get from CMDB (auto-discovery) project ? (cont.)

- New! Defining “preferred configuration" and checking if this policy does apply. Example – "Web Server should have Antivirus, MQ, IIS version 8, MSSQL service pack x, port 80 and 81 opened in the FW" then checking that all web servers are configured this way.
- New! Integration between the CMDB CI's and the Service Desk. This enables to correlate each incident\problem to specific CI's.
- Basic workflow – Example when CMDB discovers new server it executes several automatic tasks (adding it to the "to-do list" of ESM team, installing agents, etc.)

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What clients currently get from CMDB (auto-discovery) project ? (cont.)

- **New!** Manage change flow (CAB) in CMDB based system including which services are in relation to the service being changed
- New! From the CMDB change management system alter the monitoring status of applications when it is changed
- Very basic “closed loop change management” when new system is discovered a ticket for “adding the system” is created. After the system is added the ticket is closed automatically.
- New! Using the CMDB data as the asset management system.
- Updating both the BPA (Business Process Analysis) and Project Management systems

This is a major improvement from last year’s situation!

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What clients currently do **not** get from CMDB (auto-discovery) project ?

- Sophisticated workflow\automation. BTW, who is the leader: ESM\Operation team or System\Infra team?
- Topology Based Event Correlation
- From incident management to problem management using CMDB functionality (automatic correlations)
- Capacity planning
- Closed look change management
  - Don't forget in closed loop change management incidents\problems update the development team and should be tracked seamlessly ("the bug you have open was is now at testing stage and is scheduled to go to production in 3 days")

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STKI on CMDB

- Major improvement from last year
- Still CMDB projects are difficult and in many cases will not yield the result that was planned.
- Top management active support is a must. Not all IT organizations can get this kind of support.
- STKI Round Table: June 16
- CMDB : “If you will it, it is no dream”

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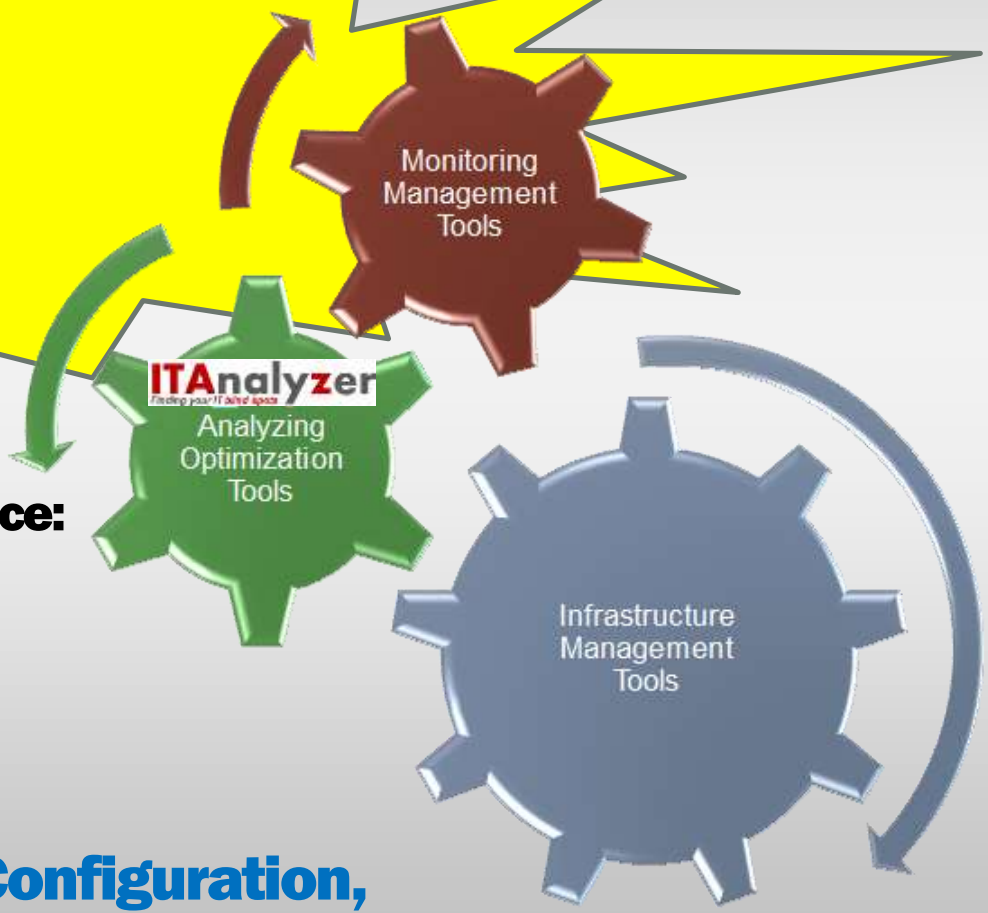
New tools: ITAnalyzer - The Missing layer for

ADDRESSING THE NEW IT NEEDS…

ANALYZING TOOLS



Optimize: IT assets, review IT Performance: past, present, and future.
Empowering: IT leadership to take Immediate actions and optimize Future Data-Center results.

Analyze: Usage, Anomalies, Configuration, Performance, Capacity, Trends…

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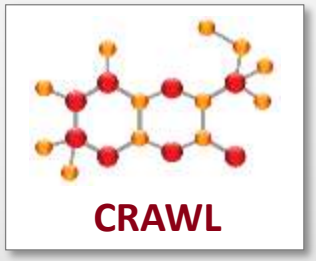
ITAnalyzer
Finding your IT blind spots

EVOLVEN: Change & Configuration Analytics for the Modern Data Center and Cloud

- Example of modern tool: Evolven

Breakthrough Analytics
to deliver **Actionable Information**
from **Constantly Changing, Overwhelming Configuration**



CRAWL

- Dynamic crawling
- Ultra-deep collection
- Negligible overhead

ANALYZE

- Knowledge driven
- Comparison engine

INFORM

- Web-based visual presentation
- Drill-drown
- Notifications

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From STKI RT – Environments (Dev, Test, Prod)

- One of the areas that can contribute a lot to the availability and reliability of IT organizations
- Still in most cases under-budgeted
- Should be coordinated under the PMO (and not under the DBA team)
- Different refresh cycles:
  - Data– might take several hours to a day
  - Technology (building from scratch) – might take a week

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From STKI RT – Environments (Dev, Test, Prod)

- Different types of environments:
  - Prod
  - Pre-Prod. Should be identical to Prod. Sometimes used as training environment
  - Testing. In many cases per each project.
  - Development. For each project.
  - Other environments. Example – “integration environment” where “new code” is being tested for not breaking end-to-end processes
- Smaller organizations will have just – Prod – Test – Dev environments.

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The different meanings of IT Asset Management

- Asset Management maturity model:
  - Inventory – what is installed
  - Inventory – what is installed and where (physical)
  - Inventory – what is installed and how much it is used (metering\usage)
  - Asset lists for Insurance, Compliance, etc.
  - Combining procurement systems with actual inventory lists (on line compliance). How can I translate complicated contract to structured representation?
  - Complete lifecycle - asset management solution from procurement, warehouse, distribution, IMAC, disposal. Most clients use ERP.
- Example of what ERP asset management solution issues related to IT – SW upgrade. Most ERP just remove the old version and add the new version. History of item is lost.

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ESM (Enterprise System Management) support ratio

- Numbers of servers in Open (Win, Linux, Unix) covered by ESM team (including BSM, CMDB, etc. – if implemented)
- MF AS/400 not included in server count – significant bias. Best metric is "per CI monitored…".
- Data about "not capable ESM teams – above 1000 servers per FTE" not included

Per FTE	# of Servers (all)
25 percentile	227
Median	**412**
75 percentile	485

Source: STKI

- About the same as last years data

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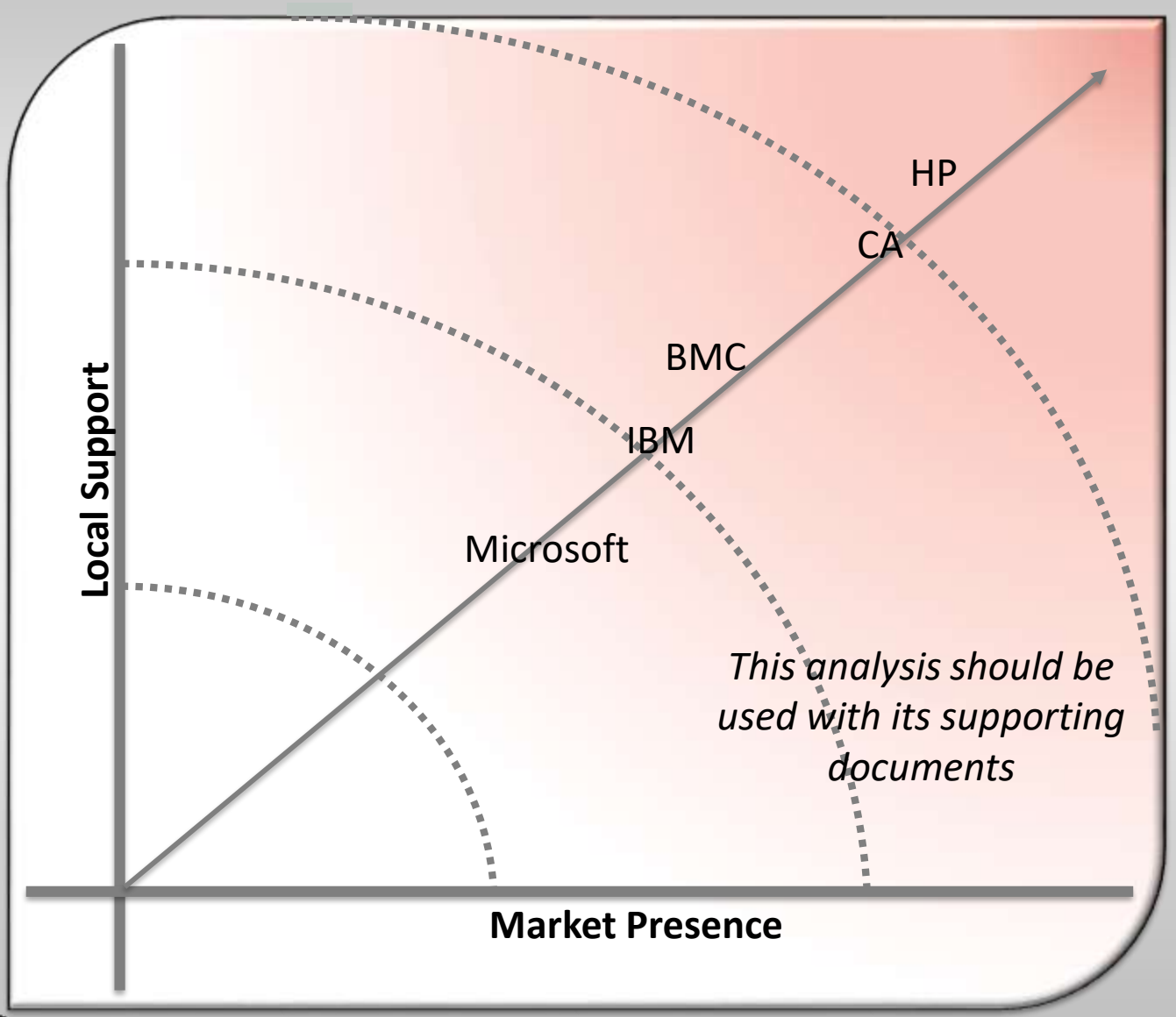
Enterprise System Management Frameworks Israeli Market Positioning 1Q12



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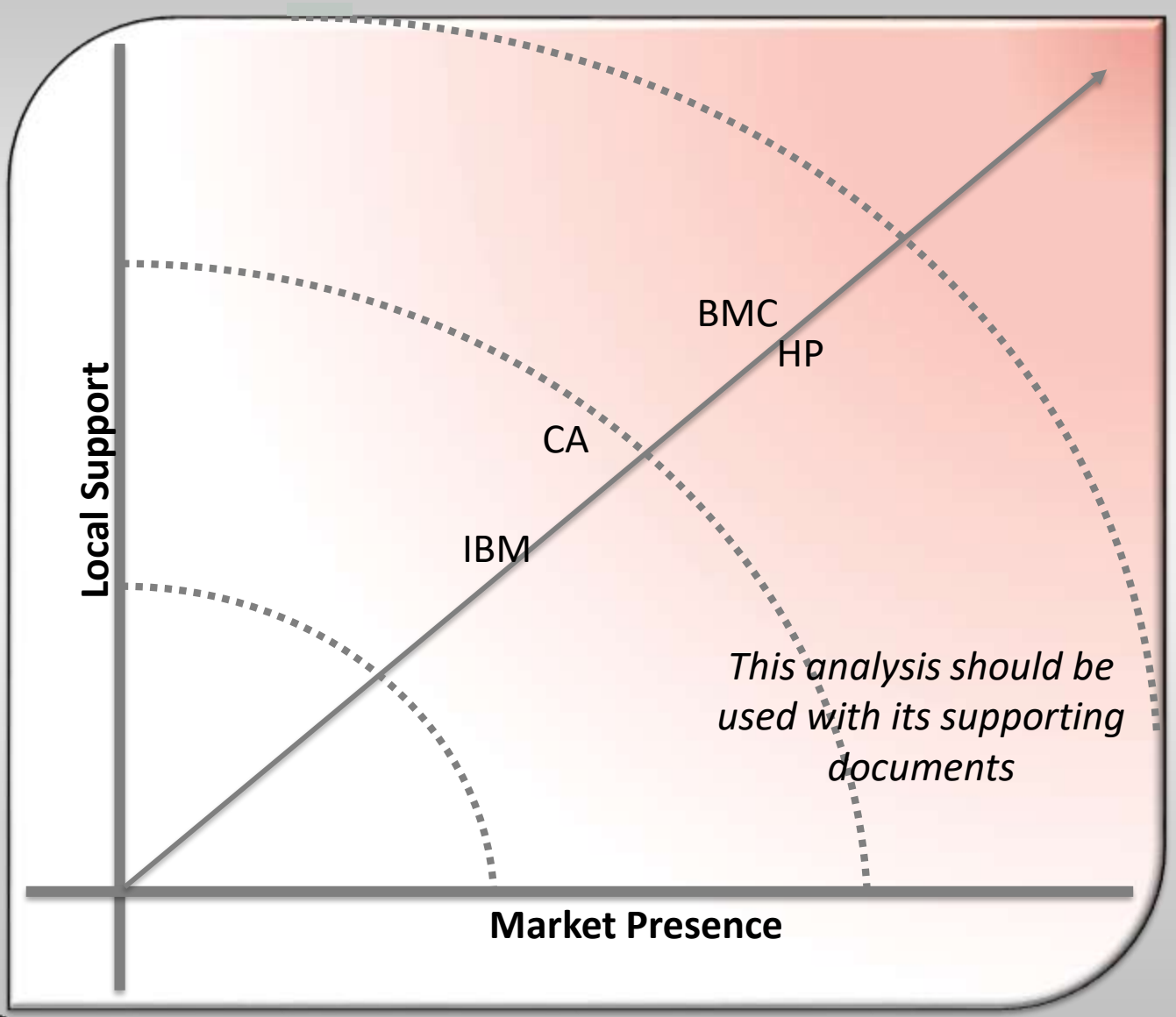
CMDB framework Israeli Market Positioning 1Q12



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Selected Installations 2011-1Q2012

Partial List of selected wins –ESM

IBM Tivoli– Mataf, Gan Bahai (asset)

HP (mainly with Aman) –Playtech, Amdocs (upgrade), Tnuva, Supersol (upgrade), Visa Cal (upgrade), Netafim, Liveperson (upgrade), Cellcom (upgrade) , Mirs (upgrade)

BMC – Bezeqint (Cloud automation), Better Place (IT), Migdal, Zim, SCD

Bank Leumi (upgrade, Comverse (upgrade), IAI (project)

CA - Bezeq, Bank Discount (upgrade), IEC (upgrade), Ministry of Health (upgrade), Rafael (upgrade), Zim (Spectrum), Yes (Wily), NetQOS, Haaretz, Hot (upgrade), Israel Nature and Parks Authority, MOD (upgrade),

Selected Ins

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Selected Installations 2011-1Q2012 Partial List of selected wins –Alternatives to the Big 4 ESM

Centerity- Mimiun Yarhir, Psagot Ofek, Bank Yahav, Eliyahu Insurance, Dash brokers, IAF (project), Shva, Kensho, Keter Plastic, Elisra, Ashdod Port, Ikea, Alvarion, Xeround, Rishon Lezion Municipality
TriggerPlus: Fire department, Telhai college

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STKI on Enterprise System Management (ESM)

- The Change Management process \CAB's is crucial for sustainable ESM project
- Before moving to CMDB be sure that you have:
  - Manual change management process that works 100%
  - Standard system management (agent\agentless)
  - End User Experience
  - APM where needed
- Be realistic with your CMDB project

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Selected ESM products (big 4) and integrators
Selected products and Integrators

	IGS	Matrix / Tangram	Ness	Team Malam Netcom	AMAN	HeadON	DoITWize	Ticomsoft	Techmind	e-RO Touch
CA			x	x					x	
Tivoli	x	x				x (netcool)				
HP					x		x	x		
BMC		x								x

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Agenda

Major paradigm shifts

Development and SOA

ESM BSM CMDB

DBMS and DATA

Platforms – Servers

Clients

Storage

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DW appliances

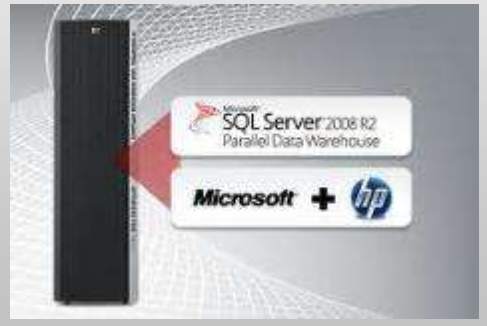
Big Data solutions that are in

Teradata

EMC Greenplun

Oracle Exadata

Source: http://www.asugnews.com/2011/09/06/inside-saps-product-naming-strategies/



Microsoft Parallel Data Warehouse

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The different technologies (too short to be true…)

Teradata: MPP with HW bus for joins. The most mature.

Oracle: Oracle RAC with “Dataset Storage”, Compression, etc.

Greenplum (EMC): MPP Redhat Centos Solaris, PostgreSQL, gNet sw for interconnect , also column based

IBM Netezza: MPP, Redhat, Postgre\Storage per each Core (with raid 1 mirror – hot swap), with FPGA processor per each core\disk

HP Vertica: SW for Column based

SAP HANA: In memory analytics with sophisticated Intel cashing algorithms

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DBMS appliances

- First impression from initial testing of DBMS appliances:
- Import\export was not trivial. More effort than expected.
- Unprecedented performance boost. Examples (empty machine):
  - From 7-8 hours to 20 seconds
  - From 3 hours to 1 hour
- With heavy loaded machine performance boost is lower
- Heavy IO load gets the most performance boost

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DBMS appliances selected installations

- Oracle Exadata: Bezeq, Partner, Teva, Dapey Zahav, MOD (project), Discount Bank
- IBM Netezza: IMPERVA, PEER39, EXELATE
- EMC Greenplum: Clalbit, Mediamind, Kenshoo
- SAP HANA: MOD
- Teradata: Poalim, Leumi, Isracard, Supersol, Pelephone

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DBA Ratios

- Number of open applications (all instances – dev, test, prod counted as 1) supported by DBA :

Per FTE	# of applications
25 percentile	17
Median	**25**
75 percentile	37

- The ratios are rather similar to last's years result. This means that storage staff has increased.

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DBMS Support Ratios(*)

- Number of developers (in the Open) supported by DBA FTE
- (*) Last year's data

Per FTE	# of Applications
25 percentile	11
Median	**19**
75 percentile	28

Source: STKI

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Market Status and Recommendations

- Users are using these integrators (support, maintenance) in DBMS open area:

- Oracle
- Microsoft
- Valinor Veracity
- Matrix Glasshouse
- Emet Yael Taldor InspireGEC SoftwareAG

Many small\good integrators in this area

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STKI's take on Appliances

- The danger of loosing flexibility and lock in situation should be balanced by the performance and ease of operations benefits
- It's just the beginning of the trends and the industry is not sure where Appliances will be a long term viable solution
- Teradata is the most established and mature solution
- Exadata is the natural choice for Oracle users (most of the market…) both for DW and for DMBS consolidation
- Other solutions will also penetrate the Israeli market (each has its technological advantages and the price has "some say" in this market…).

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Selected Installations 2011-1Q2012

Partial List of selected wins –ETL (other data related)

IBM Datastage –Shaam, Bank Israel, Menorah

Informatica- Visa CAL, Zim, Teva, Education Office, Tel Aviv Univercity, Ministry of Finance, Ministry of Health

Oracle ODI –Elisra, Incredimal

SAP ETL – Maccabi Health

Oracle Goldengate: VISA CAL, IDF, Prime minister office, HOT (CDC), Tnuva, Leumicard (upgrade), IEC, Jerusalem bank, Partner, Tnuva

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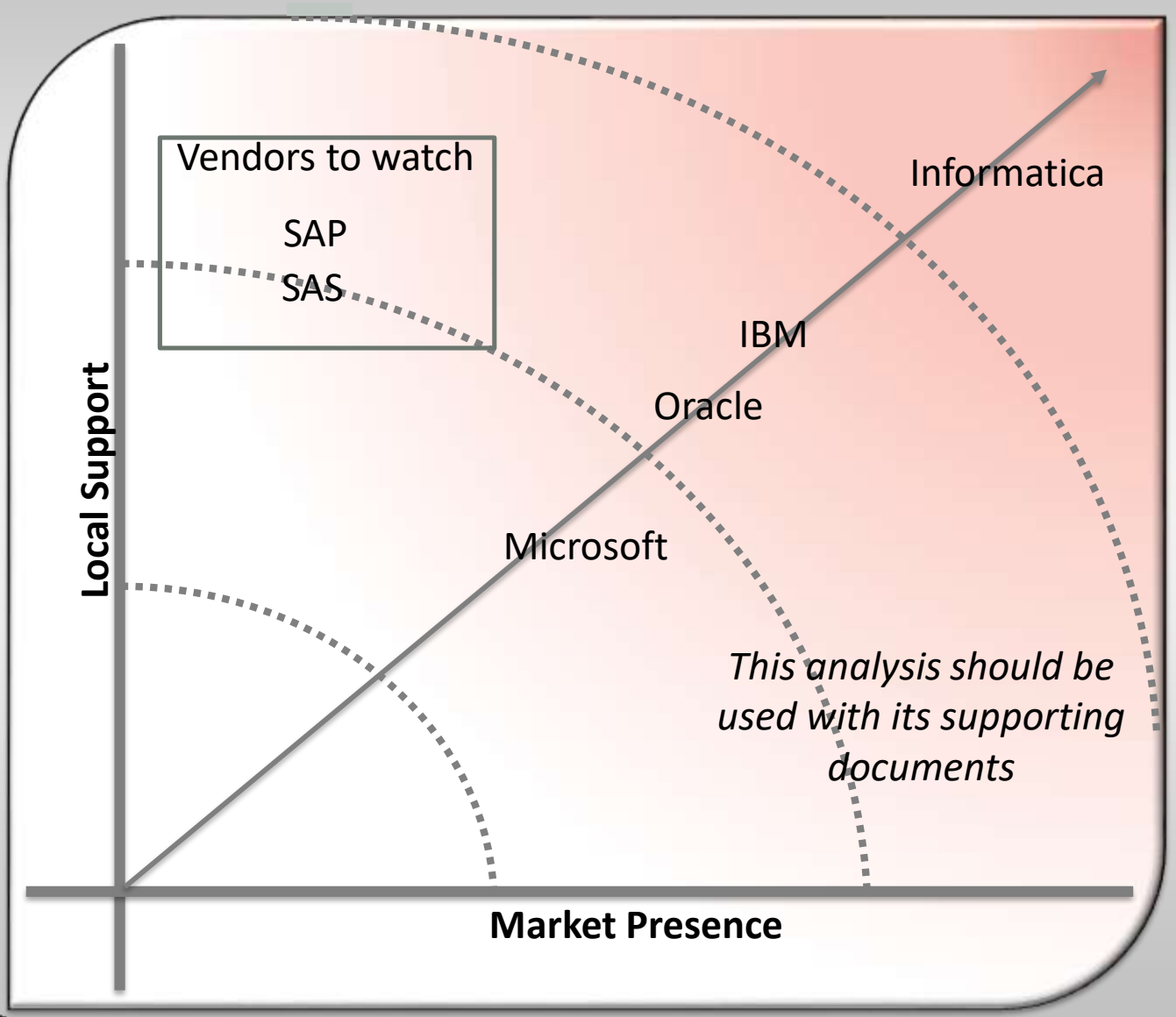
ETL Israeli Market Positioning 1Q12



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Agenda

Major paradigm shifts

Development and SOA

ESM BSM CMDB

DBMS and DATA

Platforms – Servers

Clients

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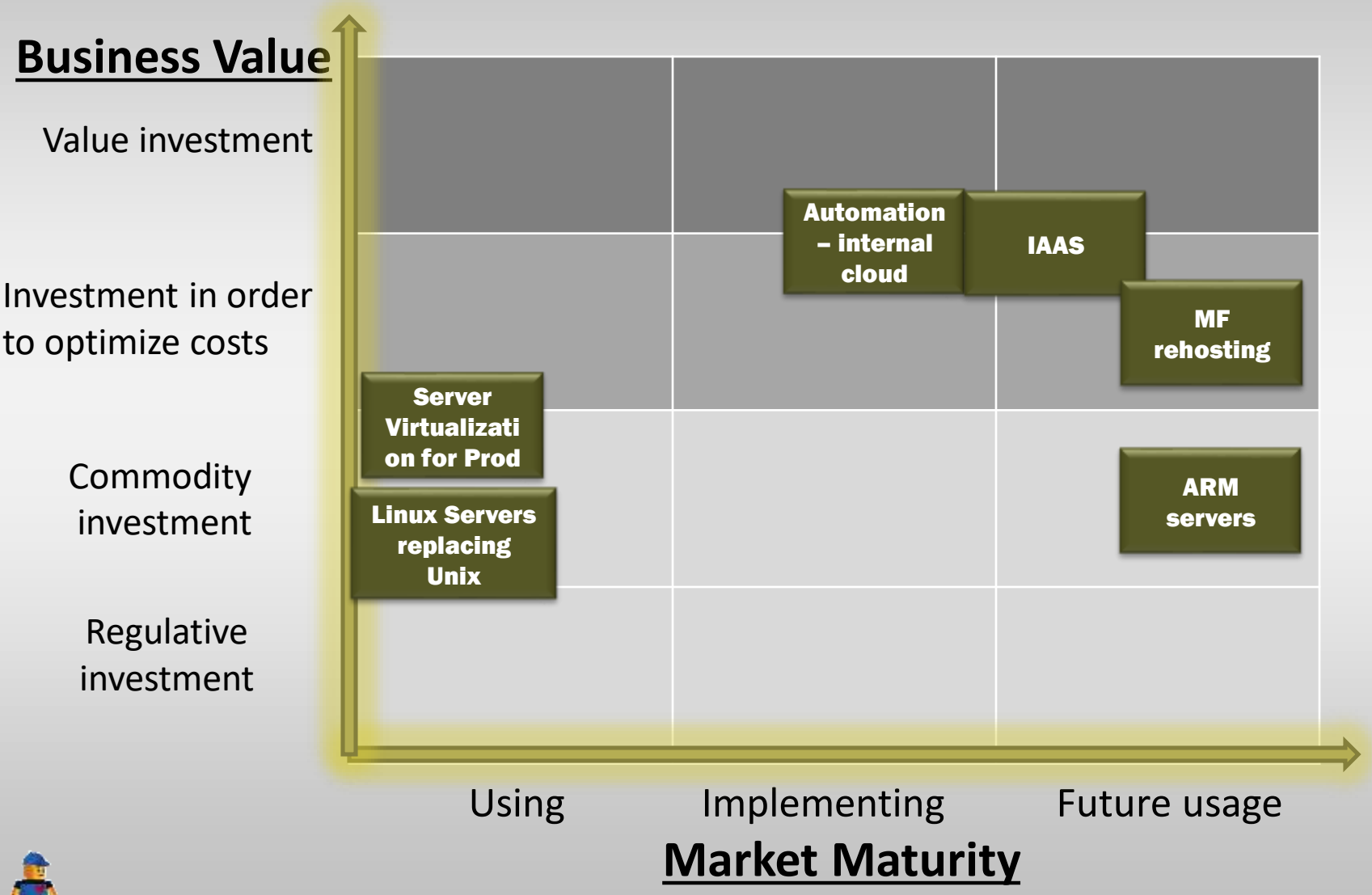
Technology Maturity Model – Platforms 2012



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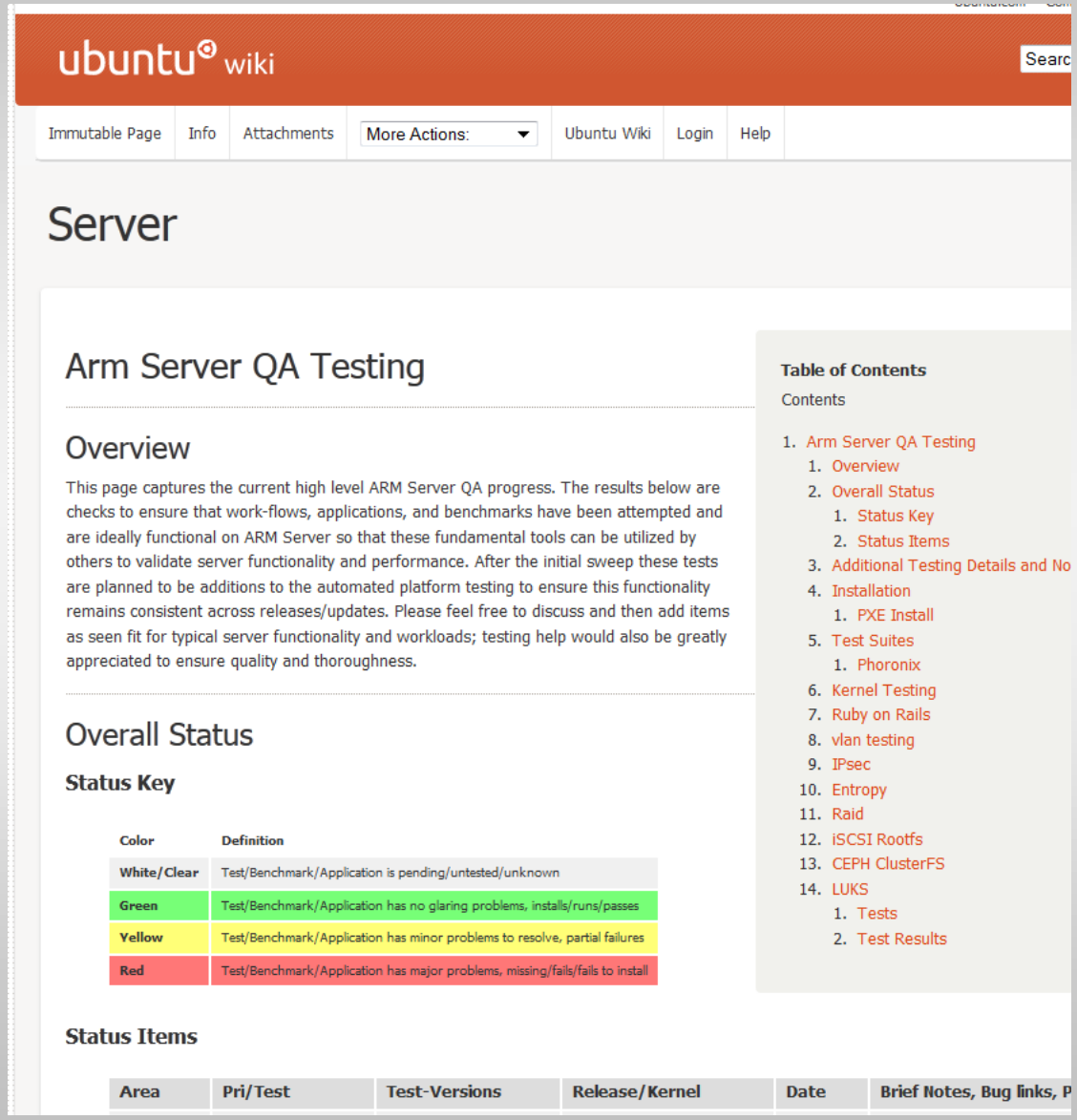
ARM servers

- Big interest
- HP Project Moonshot effort using Calxeda ARM technology



ubuntu wiki

Immutable Page | Info | Attachments | More Actions: | Ubuntu Wiki | Login | Help

Server

Arm Server QA Testing

Overview

This page captures the current high level ARM Server QA progress. The results below are checks to ensure that work-flows, applications, and benchmarks have been attempted and are ideally functional on ARM Server so that these fundamental tools can be utilized by others to validate server functionality and performance. After the initial sweep these tests are planned to be additions to the automated platform testing to ensure this functionality remains consistent across releases/updates. Please feel free to discuss and then add items as seen fit for typical server functionality and workloads; testing help would also be greatly appreciated to ensure quality and thoroughness.

Overall Status

Status Key

Color	Definition
White/Clear	Test/Benchmark/Application is pending/untested/unknown
Green	Test/Benchmark/Application has no glaring problems, installs/runs/passes
Yellow	Test/Benchmark/Application has minor problems to resolve, partial failures
Red	Test/Benchmark/Application has major problems, missing/fails/fails to install

Status Items

Area	Pri/Test	Test-Versions	Release/Kernel	Date	Brief Notes, Bug links, P

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STKI RT – Server Virtualization Adoption

- Server virtualization adoption is very high – up to 90% of all prod servers
- Main issues are Storage.
- Server virtualization help DRP and availability in general
- Server virtualization is less obvious in :
  - DBMS environments (Oracle is not officially supported)
  - Large ERP systems
- For enhanced performance Raw Device Mapping is used in some cases
- Server virtualization backup is an issue – traditional agents, vs. snaps, vs. source dedup

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STKI RT- Exchange 2010

- Moving to Exchange 2010 will require 20% to 50% extra storage space (no single instance)
- However SATA drives are an option (put emphasise on IOPS calculations with Microsoft guidelines)

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Microsoft and HyperV

- Why is HyperV, which is free, so strategic for Microsoft?
- Answer: “Whoever Controls The Spice (Hypervisor) Controls the Universe (OS)!”
- This means Microsoft will continue to develop and invest in HyperV

Source: http://zombie-popcorn.com/wp-content/gallery/blog-post-photos/dune.jpg

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Microsoft HyperV

- Selected clients : Rafael, Bituach Leumi, Shaam, Leumicard (also VMWARE), Hot (testing), Egged, Tnuva, Clalit (also VMWARE), Meyeden (branches)
- Microsoft mainly aims:
  - Test\ Development
  - Duplicated servers farms (Citrix, etc.)

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Server Ratios - Windows

Number of Windows Servers (logical) per System member

Per FTE	All Win Servers	Prod Win Servers (*)
25 percentile	89 servers	47servers
Median	**127 Servers**	**67 Servers**
75 percentile	185 Servers	100 servers

Result the same as last year

Server is either physical or virtual

This includes SBC\VDI (Citrix\WTS\Jetro) support

For development environment's ratios can grow up to 600 Servers per FTE

Organizations with 100% identical servers in branches can get ratios of 1:500 servers per FTE

(*) Last year's data

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Percent of Production Windows server from all Windows servers (*)

	Percent of prod servers
25 percentile	50%
Median	**62%**
75 percentile	75%

Server is either physical or virtual

(*) Last year's data

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Server Ratios –Unix Linux

Number of Unix (OS) and Linux servers per System member:

Per FTE	Unix Linux Servers
25 percentile	31 servers
Median	**45 Servers**
75 percentile	100 Servers

Roughly same ratios as last year's data

Virtualization is used much less in Unix then in Windows\Linux

Good metric for Unix is hard to find:

Per CPU (but there are machines with many virtual OS on each CPU)

Per OS (but there are sometimes huge machines with 1 OS)

Per physical server

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Market Status and Recommendations

- Users are using these integrators (support, maintenance, virtualization projects, etc.) in Servers-Platform Open area:

- HP IBM

- EMET One1
- Malam-Team
- WE
- CCC Glasshouse Matrix Neway

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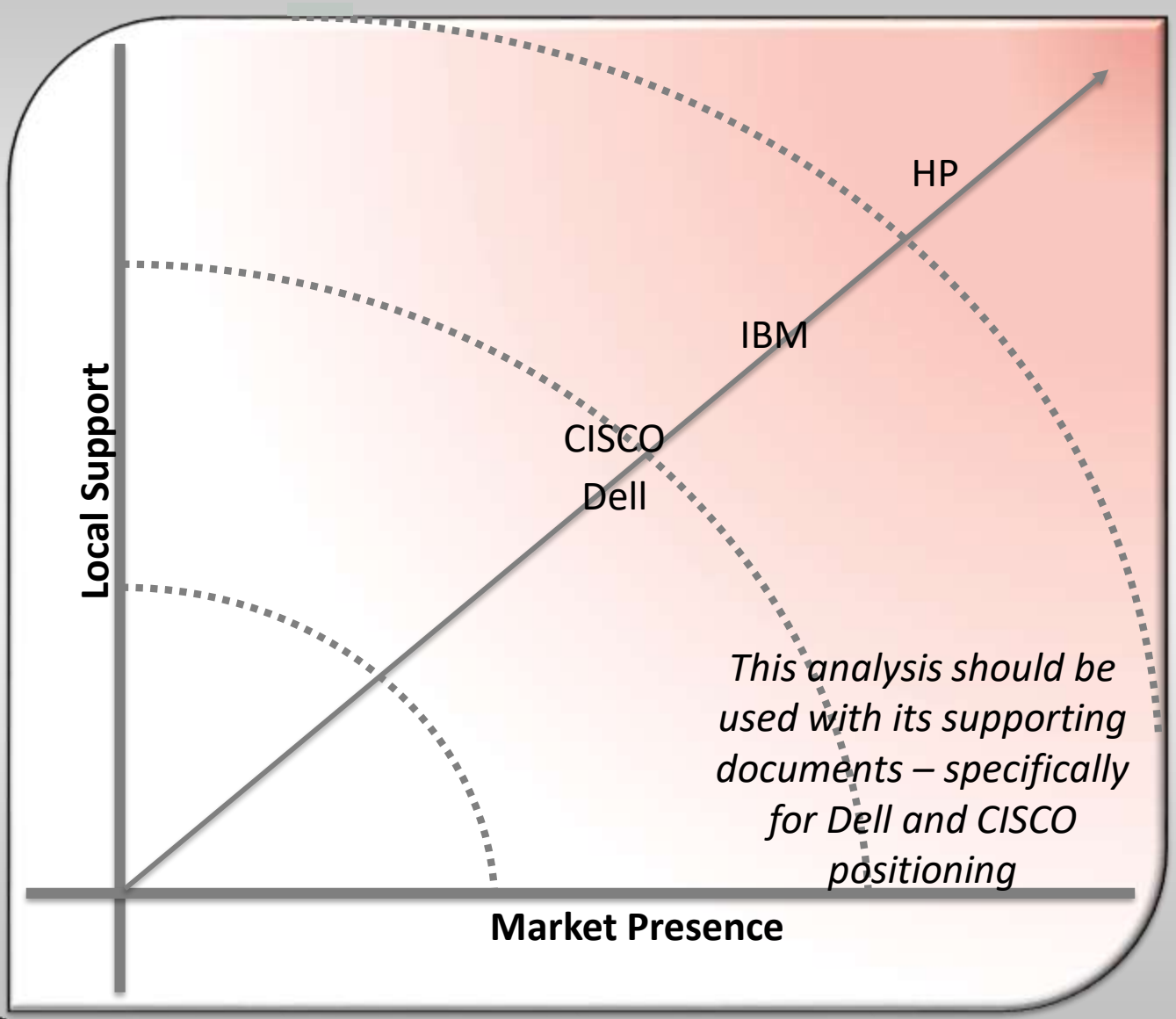
Intel Servers Israeli Market Positioning 1Q12



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CISCO UCS selected clients

- 2010\1Q2011 Amdocs (project), Nice, Discount Bank, Yes, Bezeqint, Interwize, Vishay, IRRATIONAL SOLUTIONS, Foris, Smile 012
- 2011\1Q2012 Afcon, Ayalon Insurance, Colmobil, Broadcom, Cellcom (unified communications project), Clalbit, Clarizen, Elbit, Hachsharat Hayeshuv, IAI (project), Keshet TV, Liveperson, Mofet, Netafim, Samsung, Rafael (project), Simle, Vishy , Migdal

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Cisco

- Last's year take is still relevant:
  - Cisco has certainly "pumped new blood" into the mature server market
  - Many clients see the benefit in unified (fabric) computing where compute storage and networks are provisioned together in agile manner. Cisco is perceived by many clients as a leader in this trend.
  - Users expect the rest of the players to follow.
  - Still, users want standardization and in HP\IBM dominant market many users will go to Cisco new only at good price tag off HP\IBM offering.
  - Cisco is not always able to offer this kind of price tag. Large network deals can help the client in this perspective.
- Cisco is gradually progressing into the Israeli market- not a small niche player anymore… but not threatening HP nor IBM

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Dell

- Last's year take is still relevant
  - Dell has very good name for its reliability and for its "value per money" proposition
  - However in the Blades market Dell was a bit late (functionality, certifications, marketing, etc.) and this led to "Dell lovers" to prefer HP or IBM in Blades.
  - Currently Dell is not considered "well established" Blades player in Israel but it has the potential for regaining this position
- However Dell is putting a growing effort into the enterprise market (services, partnership) aiming especially at the storage market

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NOC, Operators Ratio

- Number of production servers per NOC person:

Per FTE	Servers (win, linux, unix)
25 percentile	73 servers
Median	**108 Servers**
75 percentile	196 Servers

- Huge variety of NOC responsibility:
  - Look only at monitoring screens
  - Batch operations (both production Control-M, FTP, and infra such as backup)
  - Change management
  - Service desk during night
  - Physical room – electricity, cooling
- Mostly 7*24 with\without Saturday
- In organizations with no NOC the Service Desk will have to look at the monitoring screens
- MF AS/400 not included in count

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STKI on Platforms

- Server virtualization will continue to be the dominant best practice
- Private Cloud initiatives will converge partly with devops
- The converged data center will gain some momentum. However, internal politics, (system vs. storage vs. networking), is slowing its adoption
- White boxes (servers) will fight the established vendors. Big Data environments (Hadoop, etc.) can work fine on commodity (even low end) HW
- ARM servers are just emerging

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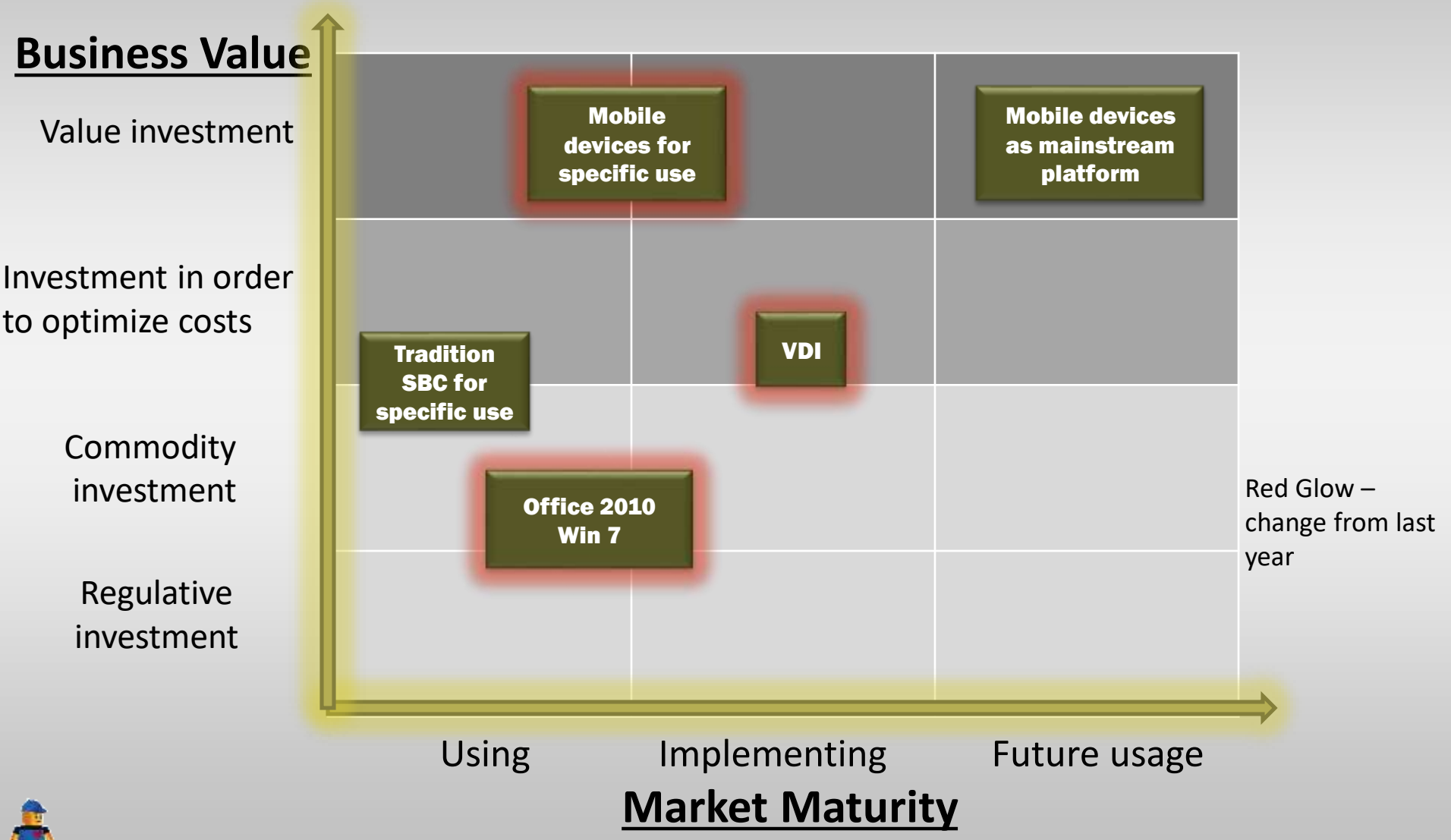
Technology Maturity Model – Clients



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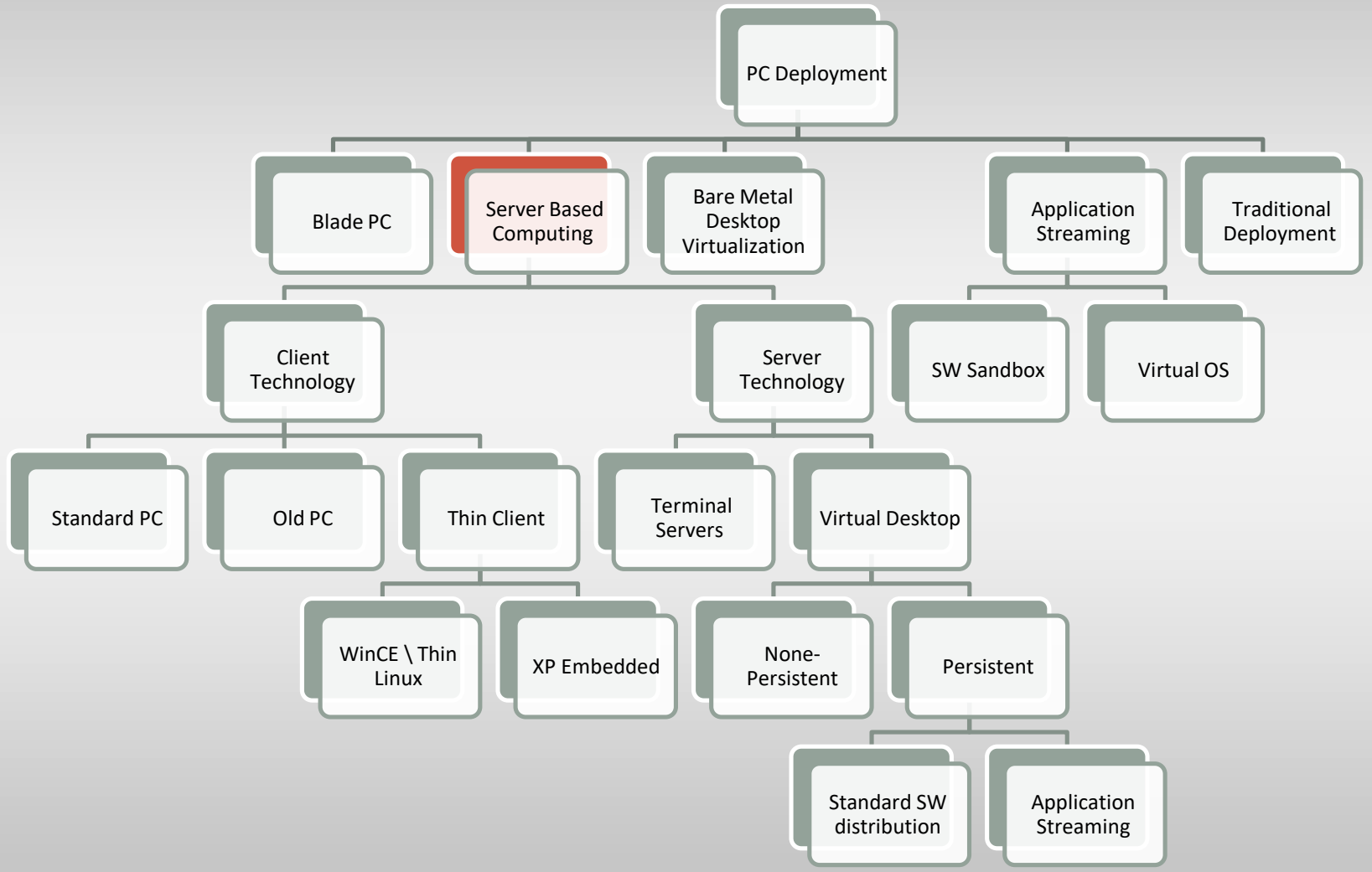
PC Deployment Options (and mix of these options)



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Many reasons for SBC

- Better Security
- Better operations = better availability! Especially for remote locations (employees can change HW, OS installation is faster)
- Applications compatibility issues
- Client server over the WAN
- Improved BCP
- Control Room for crises situations
- Direct and Indirect ROI (example call center login storm and downtime)
- Preparation for Public Cloud (consider to move the Virtual Desktop to public cloud)
- When employees change location
- Training when there are many classes
- Harmful environment (ruggedized thin clients)
- Enable access from home, for partners, developers
- **Currently direct ROI from VDI project is not obvious (don't forget VDA license!)**

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SBC – from 1st and 2nd level to System

Per FTE	Service Desk	Second Level	Third – Image	Total Support per PC
25 percentile	208	285	1000	117
Median	**458**	**417**	**2000**	**159**
75 percentile	573	525	3050	201

Per FTE	All Win Servers	Prod Win Servers
25 percentile	92servers	47servers
Median	**122 Servers**	**67 Servers**
75 percentile	200 Servers	100 servers

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Desktop Virtualization

- The hottest buzz!
- Major pros:
  - ✓ Application Compatibility – no effort is needed – especially from the development team
  - ✓ More personalization
  - ✓ Will enable in the future public cloud
- Major cons (mainly vs. traditional terminal server):
  - ✓ Cost (VDI license, VDA, infrastructure)
  - ✓ Maturity (Dedup in Storage, updating master in none-persistence environment, etc.)
  - ✓ New technologies are needed for application distribution
- Remember – Special attention is needed for WAN usage

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Desktop Virtualization Application Compatibility

- Although Application Compatibility is major advantage of Desktop virtualization, there are still some (minor) compatibility issues:
  - ✓ When the name of the desktop has some importance to the application – the default naming convention of the VDI infrastructure is not applicable
  - ✓ In default VDI implementation SID (Security IDentifier) is reused and this can cause problems with several inventory systems

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Desktop Virtualization

- Different organizations will look at Desktop virtualization differently:
  - ✓ Organization with well managed and secured desktop environment – delivering one PC image to all employees by the IT service desk with good SLA
  - ✓ Organization with several images delivered several locations \employee types, different security mechanisms, low percentage of incidents closed at first level support, with too much autonomy to the LOB departments
- IT organization should be very clear with the desktop virtualization project targets (Business continuity, better security) .
- Currently there Desktop Virtualization is no a silver bullet (ROI, TCO) to all organization. Traditional Terminal Server is an option.

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SBC user testimony

- “Yes, SBC had significant ROI. We have reduced work force by about 10 FTE’s! Now the filed service representatives in the branches does not need to fix PC’s OS and uninstall games”.
- Conclusion: it all depends where you come from:
  - Well managed PC environment
  - Less managed PC environment

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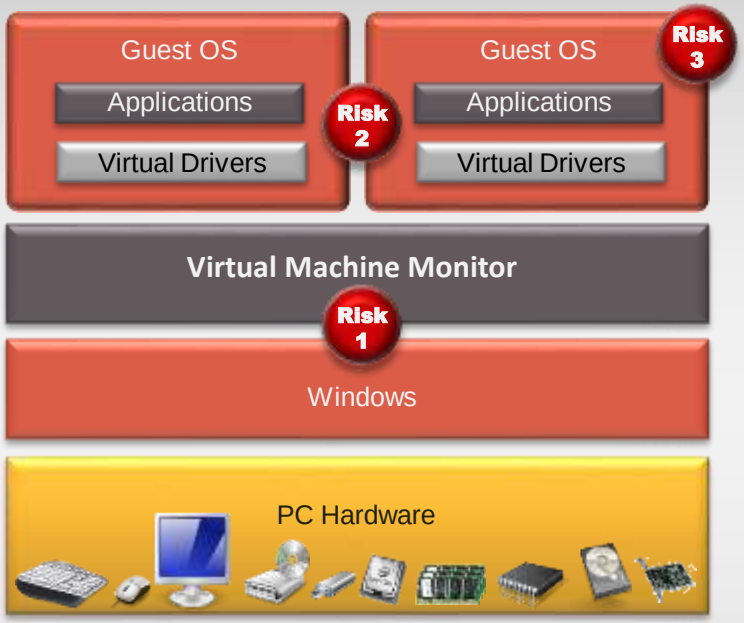
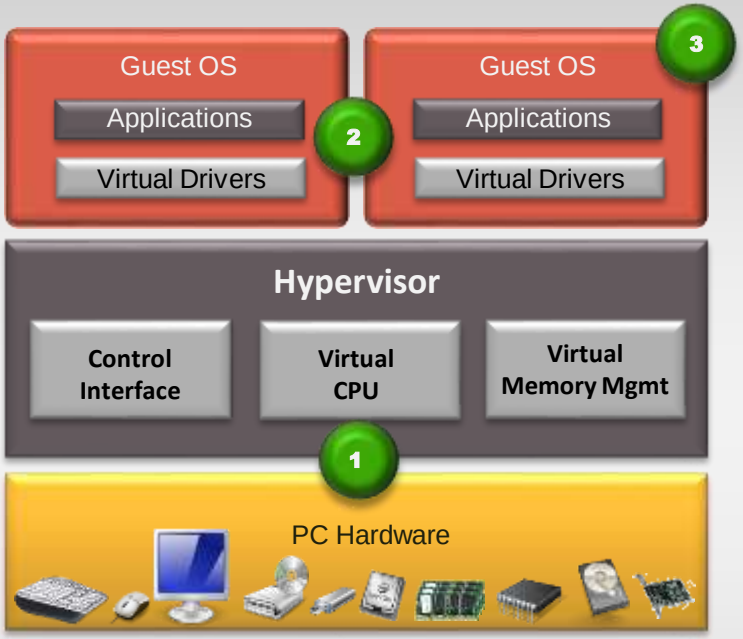
Bare Metal vs. Software Virtualization

Software Based (VMware Ace…)



Bare-Metal (NxTop Engine)



- Risk 1 — VMM Integrity
- Risk 2 — Virtual Machine Isolation
- Risk 3 — Data Exposure in Memory

- 1 — TPM Measured Launch
- 2 — Hardware-enforced Isolation
- 3 — Hardware-enforced Data Removal

Source: NXTOP

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Bare Metal Desktop Virtualization – HW compatibility

- HW compatibility is needed. Example –NXTOP, XENclient (Citrix)

Manufacturer	Model	CPU	Video	Network	Audio	Level
Acer	Aspire 1810T	Intel Core 2 Solo	Intel GMA 4500MHD [8086:2a42]	WiFi Link 5100 802.11a/b/g [8086:4232]	5 Series/3400 Series Chipset High Definition Audio [8086:3b56]	1
Dell Inc.	D630	Intel Core 2 Duo	Mobile GM965/GL960 Integrated Graphics Controller [8086:2A02]	PRO/Wireless 4965 AGN [8086:4229]; PRO/Wireless 3945ABG [Golan] Network Connection [8086:4222]; NetXtreme BCM5755M Gigabit Ethernet PCI Express [14E4:1673]	82801H (ICH8 Family) HD Audio Controller [8086:284B]	1
Dell Inc.	D630	Intel Core 2 Duo	Mobile GM965/GL960 Integrated Graphics Controller [8086:2A02]	BCM4328 802.11a/b/g/n [14E4:4328]; NetXtreme BCM5755M Gigabit Ethernet PCI Express [14E4:1673]	82801H (ICH8 Family) HD Audio Controller [8086:284B]	1
Dell Inc.	E4300	Intel Core 2 Duo	GMA 4500MHD [8086:2A42]; Mobile 4 Series Chipset Integrated Graphics Controller [8086:2A42]	82567LM Gigabit Network Connection [8086:10F5]; BCM4312 802.11b/g [14E4:4315]	82801I (ICH9 Family) HD Audio Controller [8086:293E]	1
Dell Inc.	E5400	Intel Core 2 Duo	GMA 4500MHD [8086:2A42]; Mobile 4 Series Chipset Integrated Graphics Controller [8086:2A42]	BCM4312 802.11b/g [14E4:4315]; NetXtreme BCM5756ME Gigabit Ethernet PCI Express [14E4:1674]	82801I (ICH9 Family) HD Audio Controller [8086:293E]	1
Dell Inc.	E5500	Intel Core 2 Duo	Mobile 4 Series Chipset Integrated Graphics Controller [8086:2A42]	BCM4312 802.11b/g [14E4:4315]; NetXtreme BCM5761e Gigabit Ethernet PCIe [14E4:1680]	82801I (ICH9 Family) HD Audio Controller [8086:293E]	1

Partner Name	Product Name	CPU
Hewlett-Packard	HP EliteBook 8440P	Intel Core i5-5xx, Intel Core i7
Hewlett-Packard	HP Elitebook 8460P	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP Elitebook 8460W	2nd Generation Intel Core i5, Intel Core i5
Hewlett-Packard	HP Elitebook 8560P	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP Elitebook 8560W	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP Elitebook 8760W	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP Probook 6360B	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP Probook 6460B	2nd Generation Intel Core i5, Intel Core i7
Hewlett-Packard	HP ProBook 6550B	Intel Core i5-5xx, Intel Core i7
Hewlett-Packard	HP Probook 6560B	2nd Generation Intel Core i5, Intel Core i7

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Bare Metal Desktop Virtualization

- Enable organization to have several OS on the same PC :
  - Developers that need several OS configurations
  - Secure and non-secure environments
  - Developers machine vs. Corporate machine (managed)
- More HW efficient than “Virtual PC” (Virtualization is on top of OS)
- Bare metal desktop virtualization looks appropriate for BYOPC but requires the user to reinstall his machine on the hypervisor layer
- Sample vendors: Citrix, Mokafive, Netxop, Parallels

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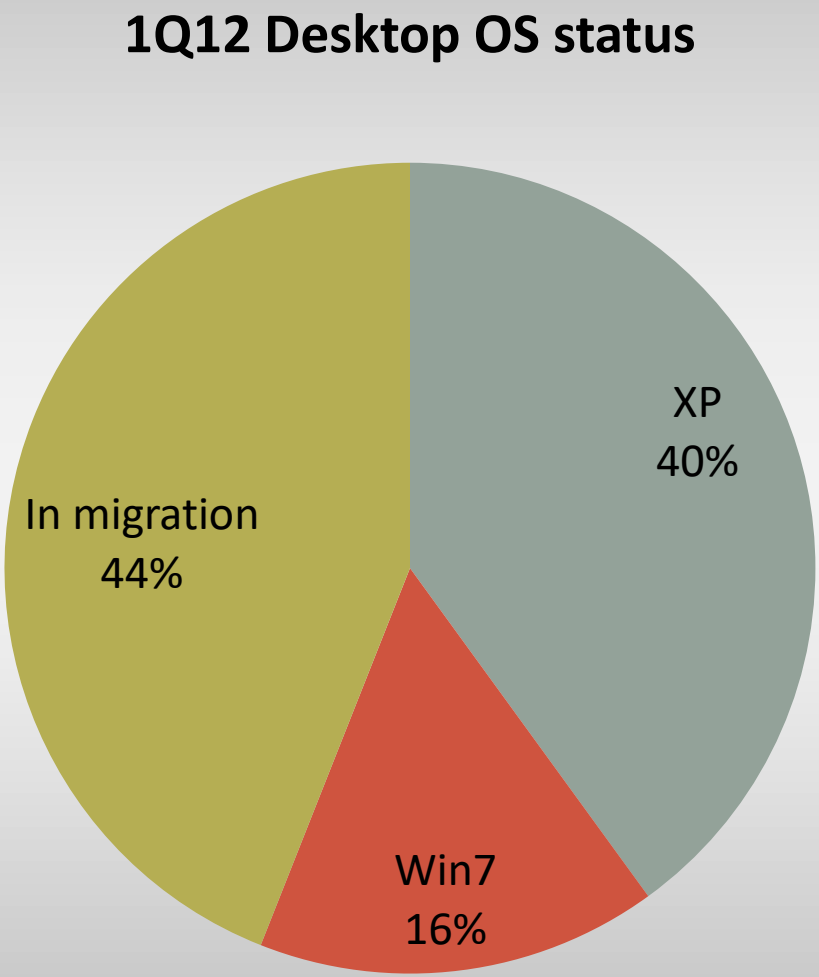
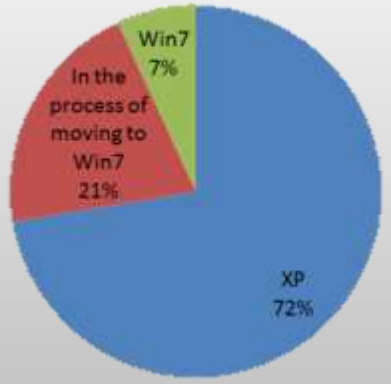
Windows Desktop status



1Q11



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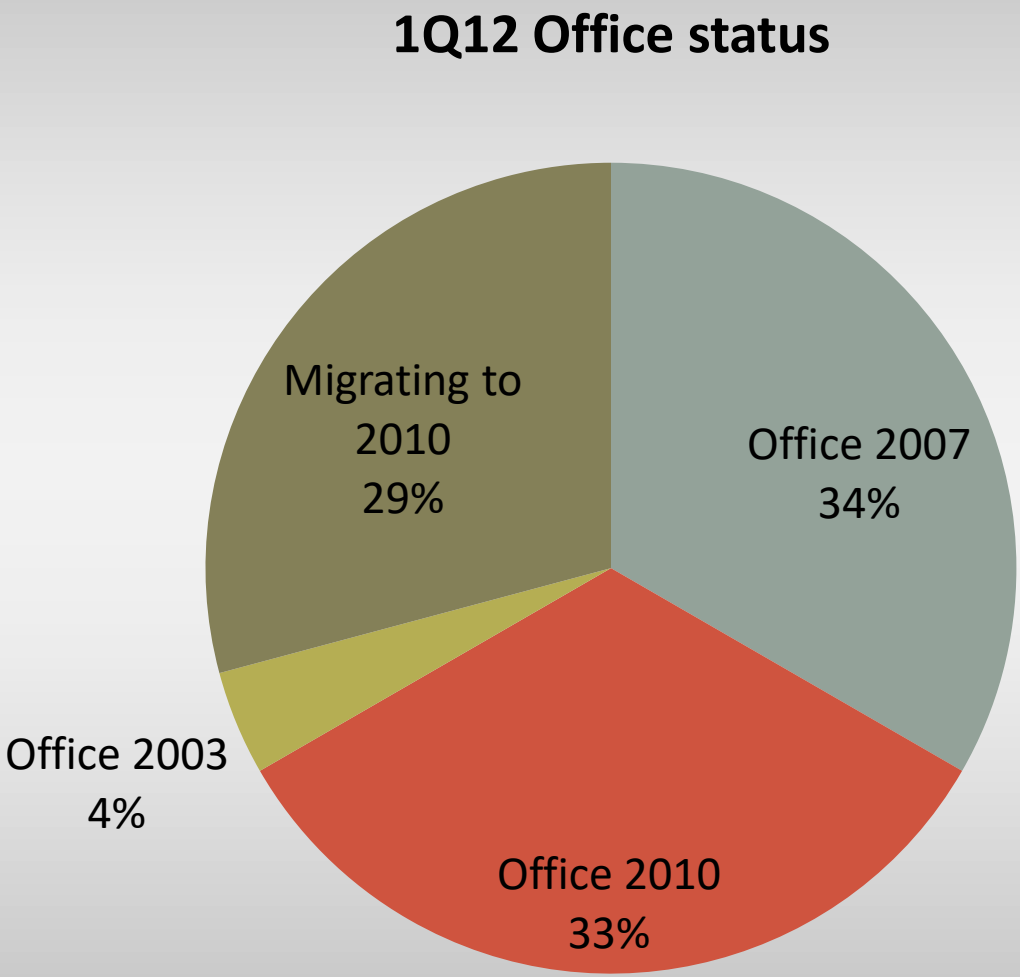
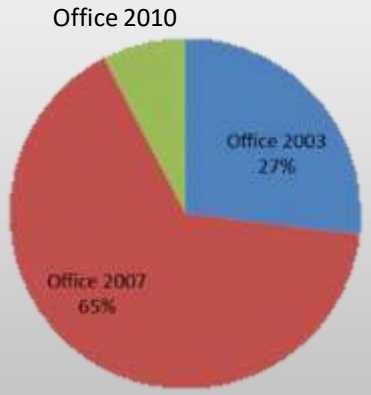
1Q12 Office status



1Q2011



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PC Support Ratios

- Support per PC is not equal to Support per Employee since there might be organizations with more PC and Employees (some employees has more than one PC) or vice versa (one PC is used for several employees working in shifts). The difference is small.
- Service desk ratios variation is related a lot to the “application support” and even “business support”.
- Application\business related support might be up to 30% of service desk effort

Source: STKI

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PC Support Ratios and TCO

- 2nd level support is dependent on geographical locations and related devices (“check readers”)
- PC Second Level support Ratios variation is very big since in some organizations the field technicians are part of new system implementation, some are responsible for HW (and some not…)
- Thin client reduces the need for 2nd level support but increases the need for infra\system support
- **Is the SBC system part of System or PC ?!**

Source: STKI

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PC Support Ratios

- Support Per PC for FTE

Per FTE	Service Desk	Second Level	Third – Image	Total Support per PC
25 percentile	250	350	1463	132
Median	**383**	**500**	**2333**	**192**
75 percentile	607	787	4200	274

- Support per Employee for FTE

Source: STKI

Per FTE	Service Desk	Second Level	Third – Image	Total Support per Empl.
25 percentile	250	352	1363	147
Median	**382**	**638**	**3000**	**203**
75 percentile	642	905	4000	324

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STKI on the end user environment

- Here we are going to see the biggest change
- IT should be responsible of mobile devices
- IT should experiment the “never ending” new technologies in this field
- SBC in general and especially VDI is appropriate for specific needs

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Agenda

Major paradigm shifts

Development and SOA

ESM BSM CMDB

DBMS and DATA

Platforms – Servers

Clients

Storage

Source: http://astonguild.org.uk/files/NEW_MENU_FRONT_RGB%5B1%5D.jpg

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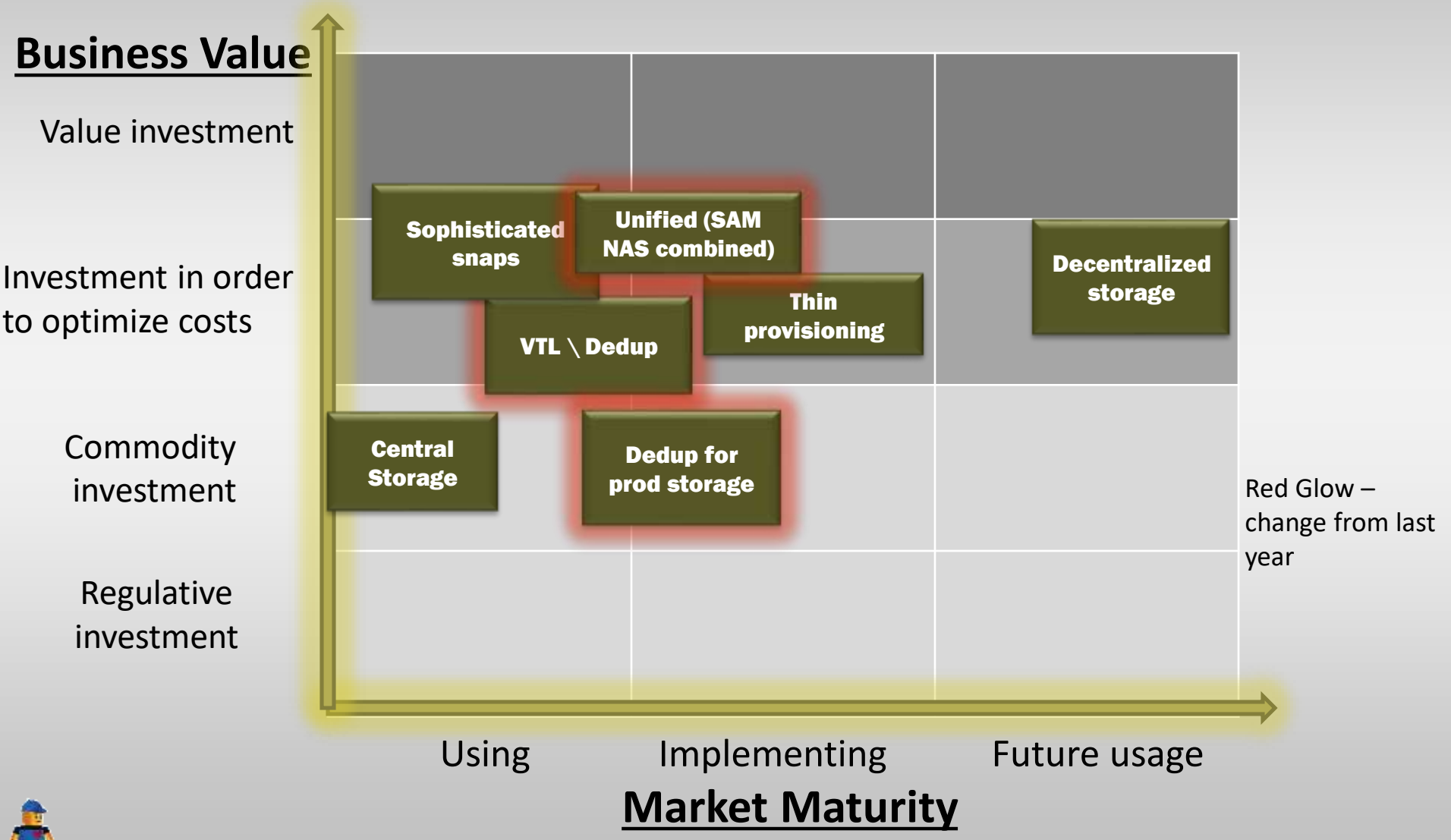
Technology Maturity Model – Storage



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Storage Size and Growth in Selected Industries

Industry	2011 1Q Size RAW	2011 1Q Size RAW	Planned Growth per year
Defense	500T-6P	6P-1P	50%- 75%
Finance	600T-1.3P	1.5-300T	25% - 75%
Health	140T-550T	800T-1P	30%-50%
Manufacturing – Retail	100T-250T	100T-200T	20%-50%
Telco	2P-3P	1P-3P	30%-50%
Governmental \Public	100T-300T	100T-300T	25%-100%
High Tech	150T-550T	150-700T	20%-30%

Actual storage growth is based on procurement cycles

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Storage future: Scale out storage built from commodity HW

Clusters = Parallel Compute

Linux Compute Cluster

Single data path to storage

Issues

- Complex Scaling
- Limited BW & I/O
- Islands of storage
- Inflexible
- Expensive

Monolithic Storage *(NFS servers)*

Parallel Compute needs Parallel IO

Linux Compute Cluster

Parallel data paths

Benefits

- Linear Scaling
- Extreme BW & I/O
- Single storage pool
- Ease of Mgmt
- Lower Cost

Panasas Parallel Storage Clusters

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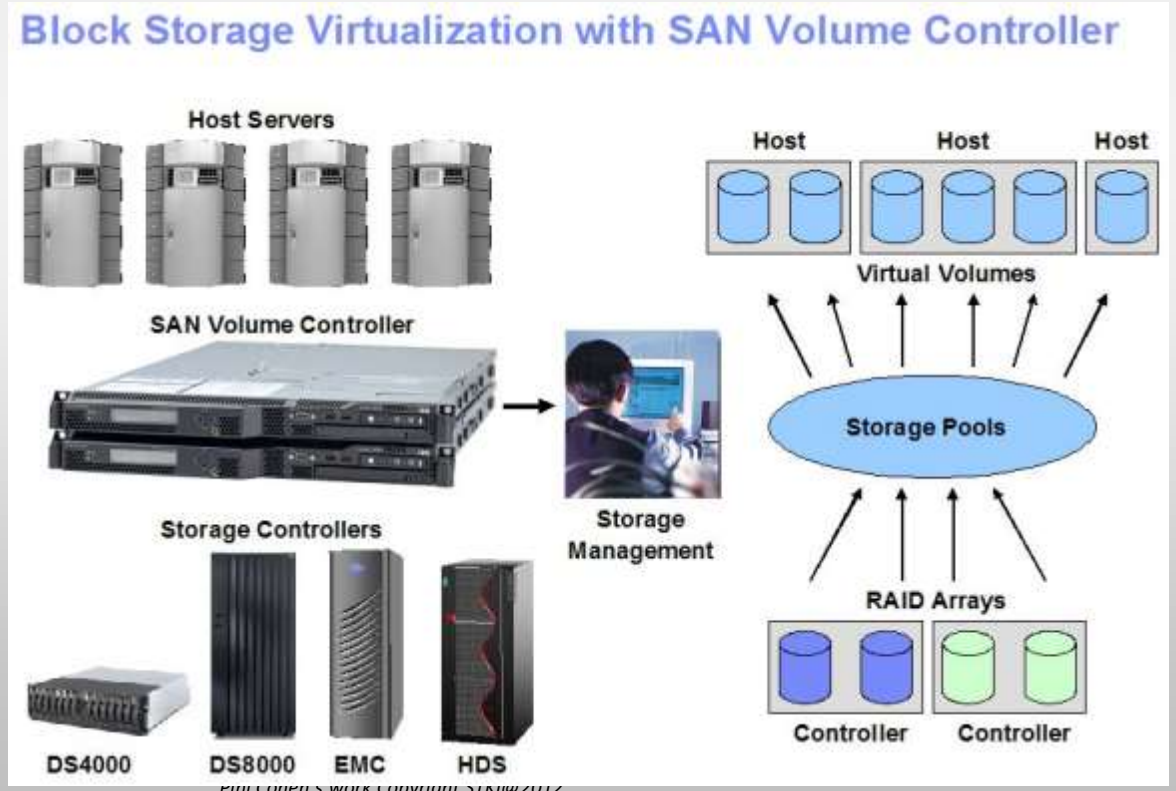
Storage virtualization- the next big thing?!

- The logical step after server virtualization
- We have been expecting it many years? Will it ever come?!
- Looks like it is progressing (abroad)
- PS – this slide is from last year…



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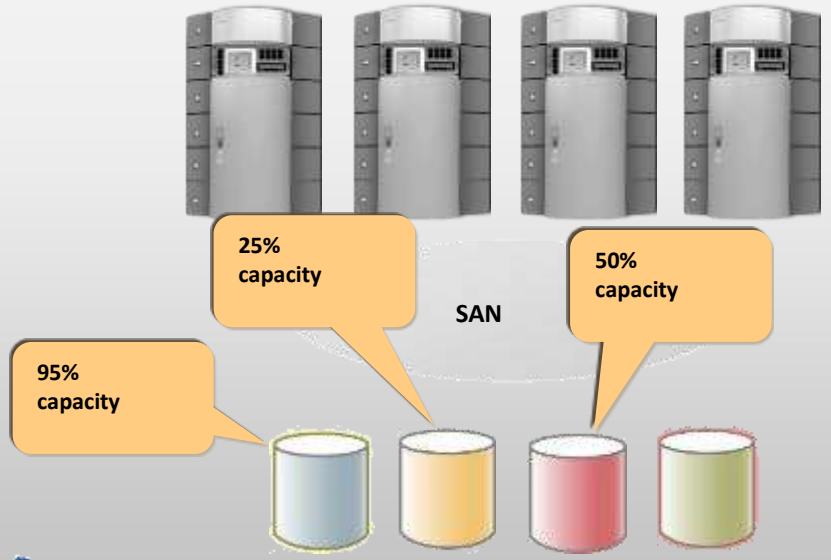
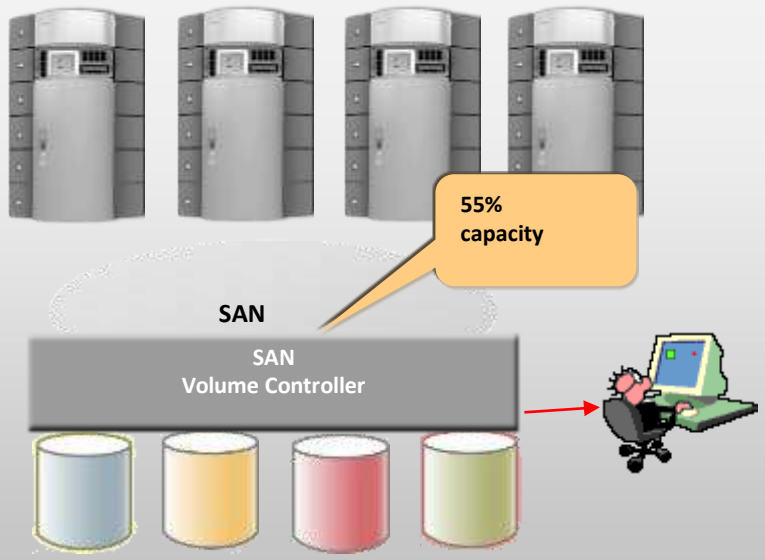
Infrastructure simplification with SAN Volume Controller

- **Traditional SAN**
- Capacity is isolated in SAN islands
- Multiple management points
- Sub-optimal capacity utilization
- Capacity is purchased for, and owned by individual processors

- **SAN Volume Controller**
- Combines capacity into a single pool
- Uses storage assets more efficiently
- Single management point
- Capacity purchases can be deferred until the physical capacity of the SAN reaches a trigger point





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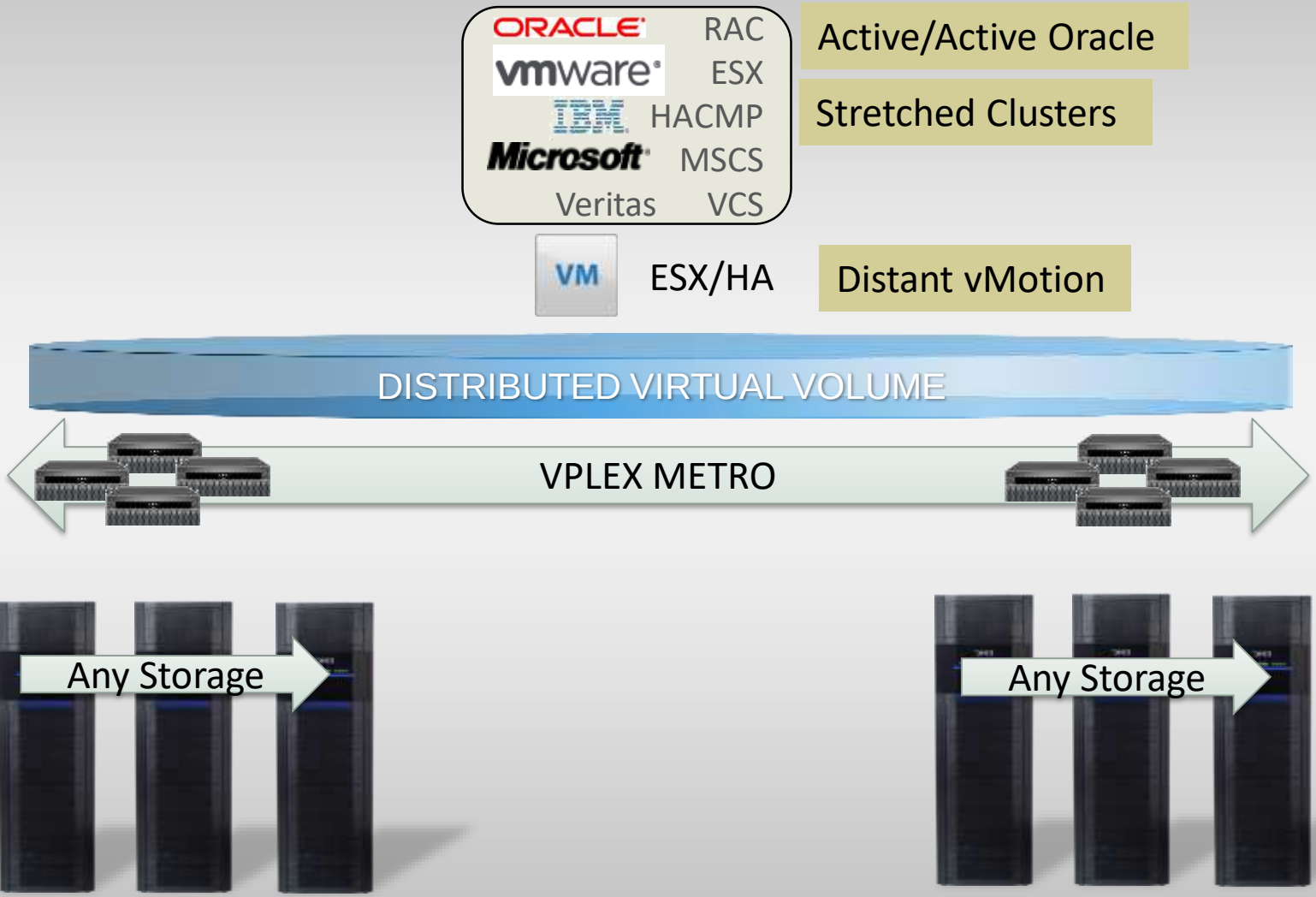
Active Active architecture – EMC\Vplex



Up to 5 millisecond between sites is a requirement

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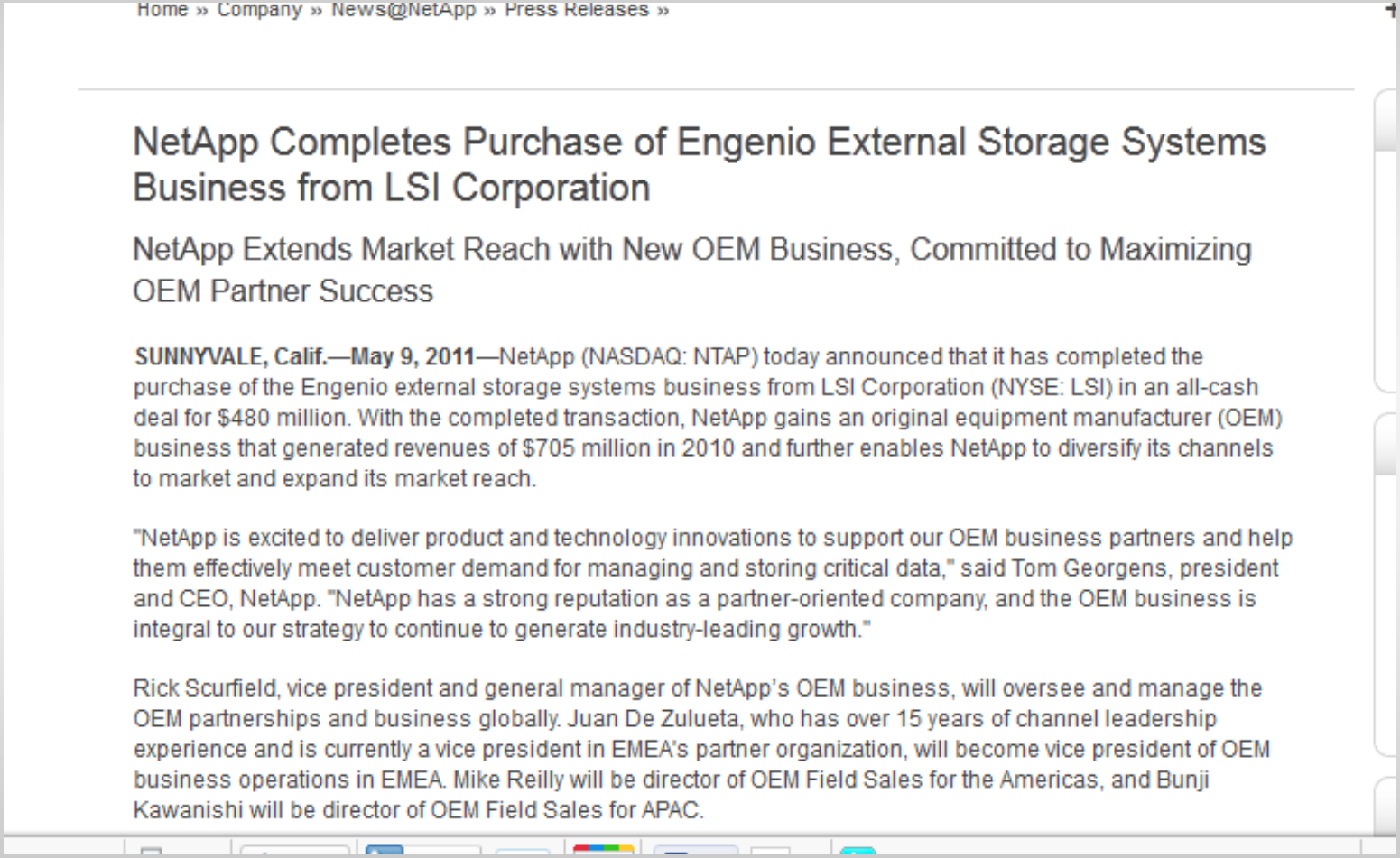
In preparation for Big Data – Netapp purchased LSI's Engenio



Home » Company » News@NetApp » Press Releases »

NetApp Completes Purchase of Engenio External Storage Systems Business from LSI Corporation

NetApp Extends Market Reach with New OEM Business, Committed to Maximizing OEM Partner Success

SUNNYVALE, Calif.—May 9, 2011—NetApp (NASDAQ: NTAP) today announced that it has completed the purchase of the Engenio external storage systems business from LSI Corporation (NYSE: LSI) in an all-cash deal for $480 million. With the completed transaction, NetApp gains an original equipment manufacturer (OEM) business that generated revenues of $705 million in 2010 and further enables NetApp to diversify its channels to market and expand its market reach.

"NetApp is excited to deliver product and technology innovations to support our OEM business partners and help them effectively meet customer demand for managing and storing critical data," said Tom Georgens, president and CEO, NetApp. "NetApp has a strong reputation as a partner-oriented company, and the OEM business is integral to our strategy to continue to generate industry-leading growth."

Rick Scurfield, vice president and general manager of NetApp's OEM business, will oversee and manage the OEM partnerships and business globally. Juan De Zulueta, who has over 15 years of channel leadership experience and is currently a vice president in EMEA's partner organization, will become vice president of OEM business operations in EMEA. Mike Reilly will be director of OEM Field Sales for the Americas, and Bunji Kawanishi will be director of OEM Field Sales for APAC.

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Thailand Floods

- Thailand Floods has cause a price increase in the HDD component level
- However, HDD inside a storage shelf are sold X3 to X5 from their component price (physical shelf and electronics should be included)
- The Israeli big storage buyers are not paying more (although the vendors tried to raise prices)

Source: http://cdn5.tweaktown.com/news/2/1/21360_25_photos_from_the_flooded_western_digital_factory_in_thailand_full.jpg

Source: http://www.techspot.com/guides/494-hard-drive-pricewatch-thai-floods/

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Storage Ratios

- Number of Raw TB and Usable TB per Storage Staff Member FTE (including backup and DRP of storage):

Per FTE	RAW Storage	Usable Storage
25 percentile	96T	49T
Median	**250T**	**140T**
75 percentile	429T	224T

- The ratios are rather similar to last's years result. This means that storage staff has increased.

Source: STKI

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Usable/Raw storage ratio

- Net Storage in this research – usable for applications:
  - After Raids
  - After replication to DRP
  - Without VTL's
  - The term "Usable storage" is tricky since with snapshots application can see more storage then "Raw storage"

NET\RAW	Ratio
25 percentile	34%
Median	**50%**
75 percentile	64%

Source: STKI

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Market Status and Trends

- Survey has shown that these integrators are used: (providers – from service point of view) in Storage area:

- EMC
- Netapp
- IBM
- HDS HP
- Hilan (We\Ankor), Bynet, Matrix, Malam-Team

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Market Status and Trends

- Survey has shown that these integrators are used: (providers – from service point of view) in backup area:

- GlassHouse
- IBM
- HP Emet
- Team Bynet
- MindU TrustIT

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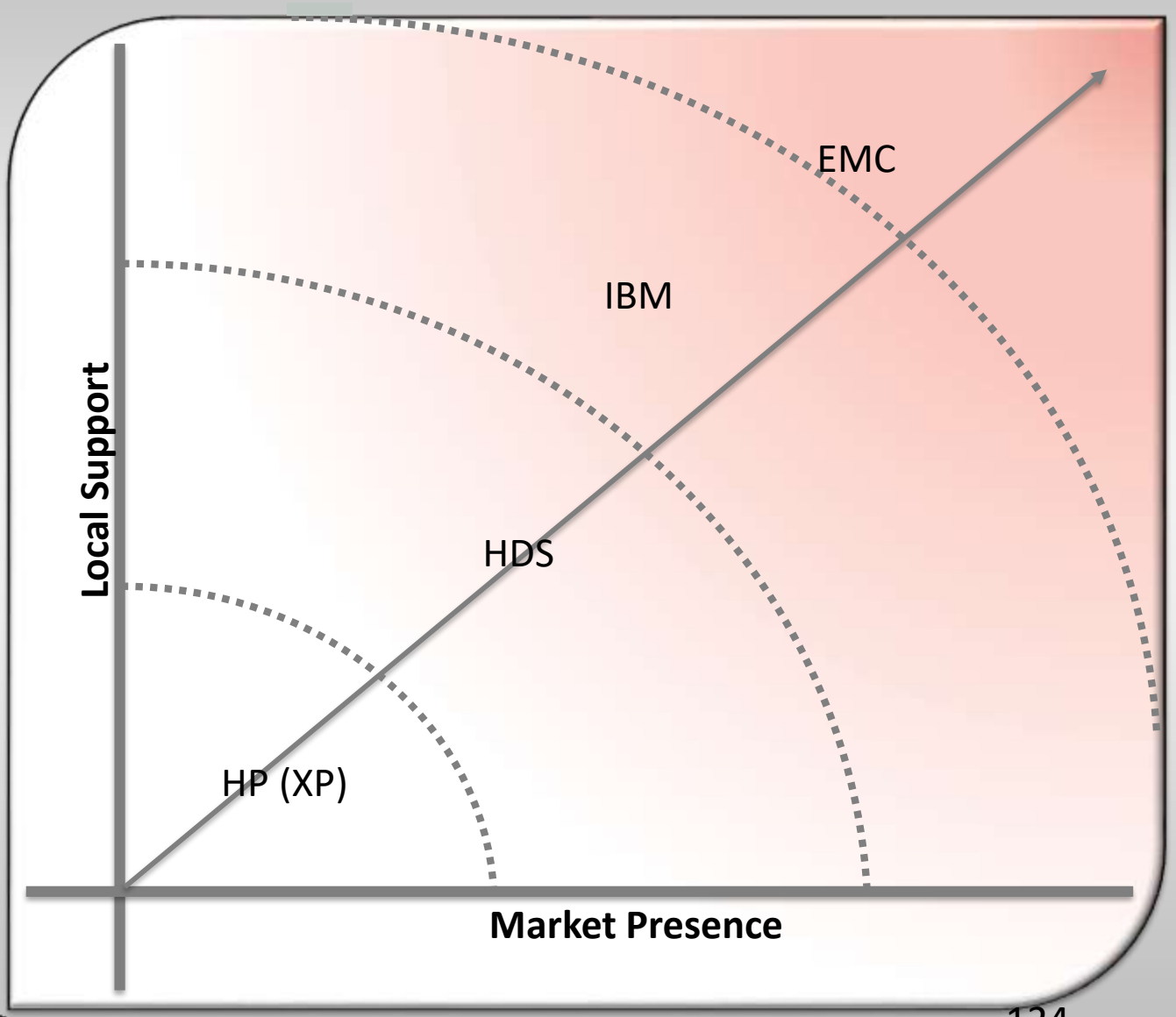
Highend storage (including MF) Israeli Market Positioning 1Q12



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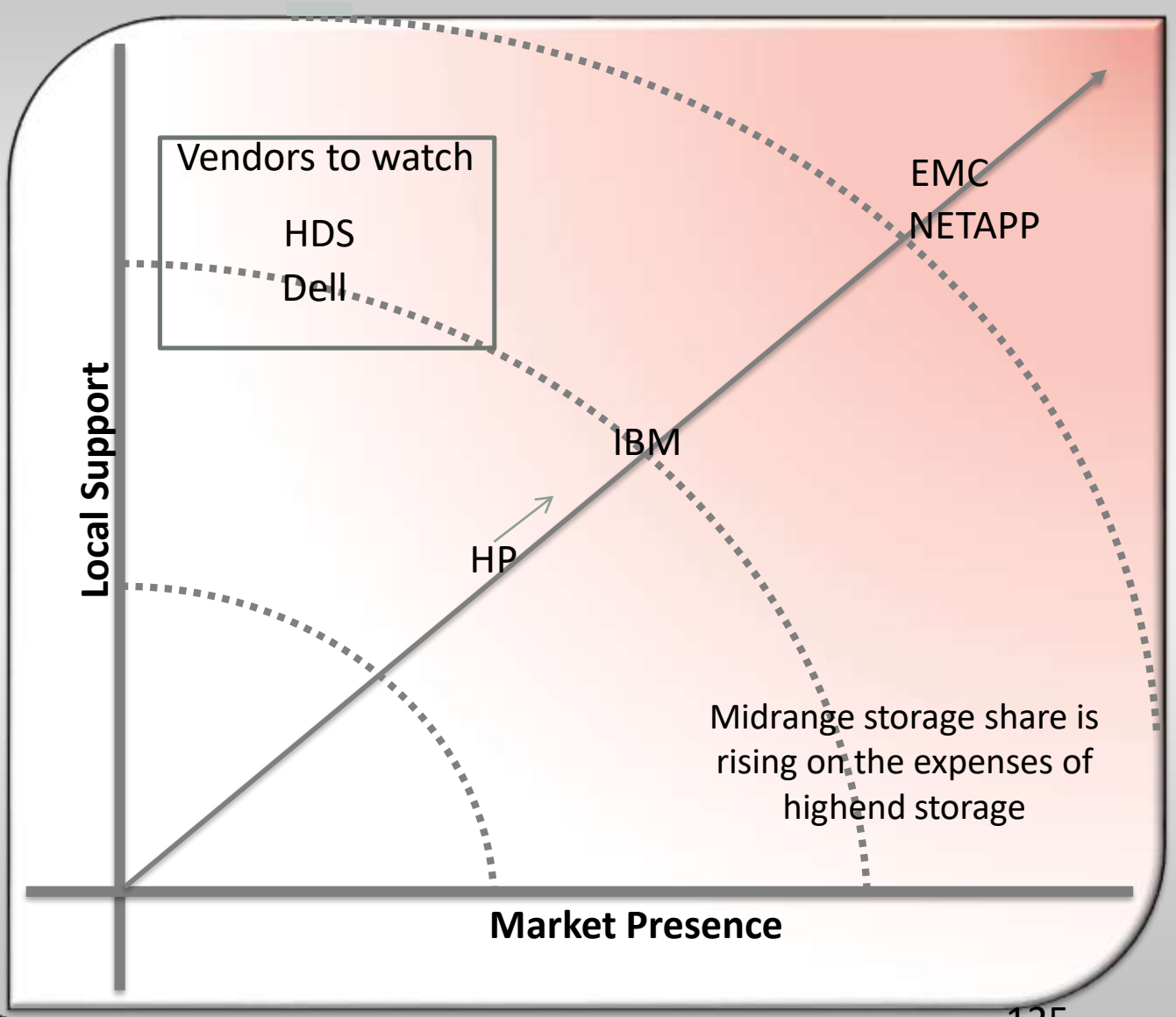
Unified (midrange) storage - Israeli Market Positioning 1Q12



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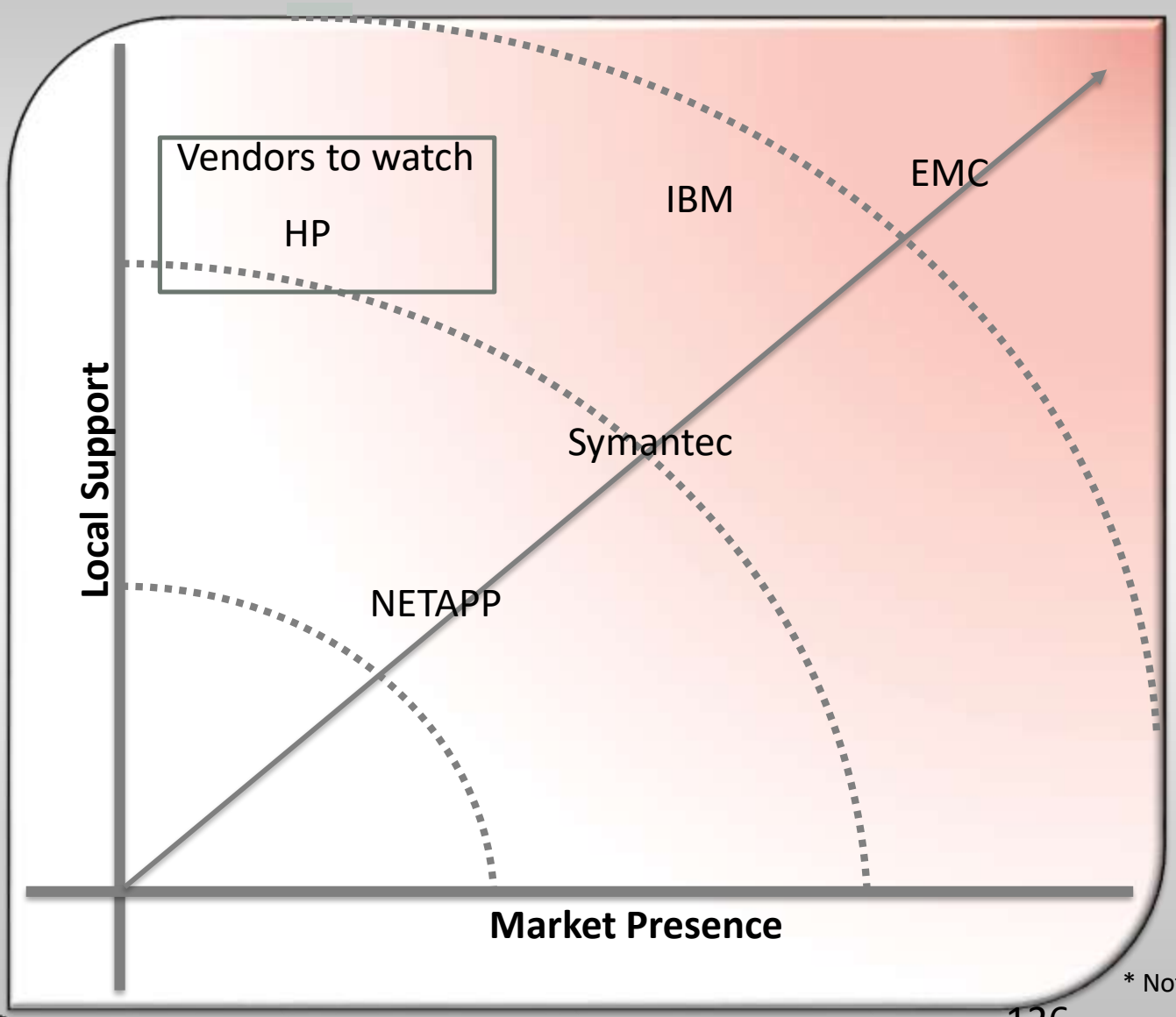
Dedup (general awareness in VTL or Prod*) - Israeli Market Positioning 1Q12



* Not really apples to apples

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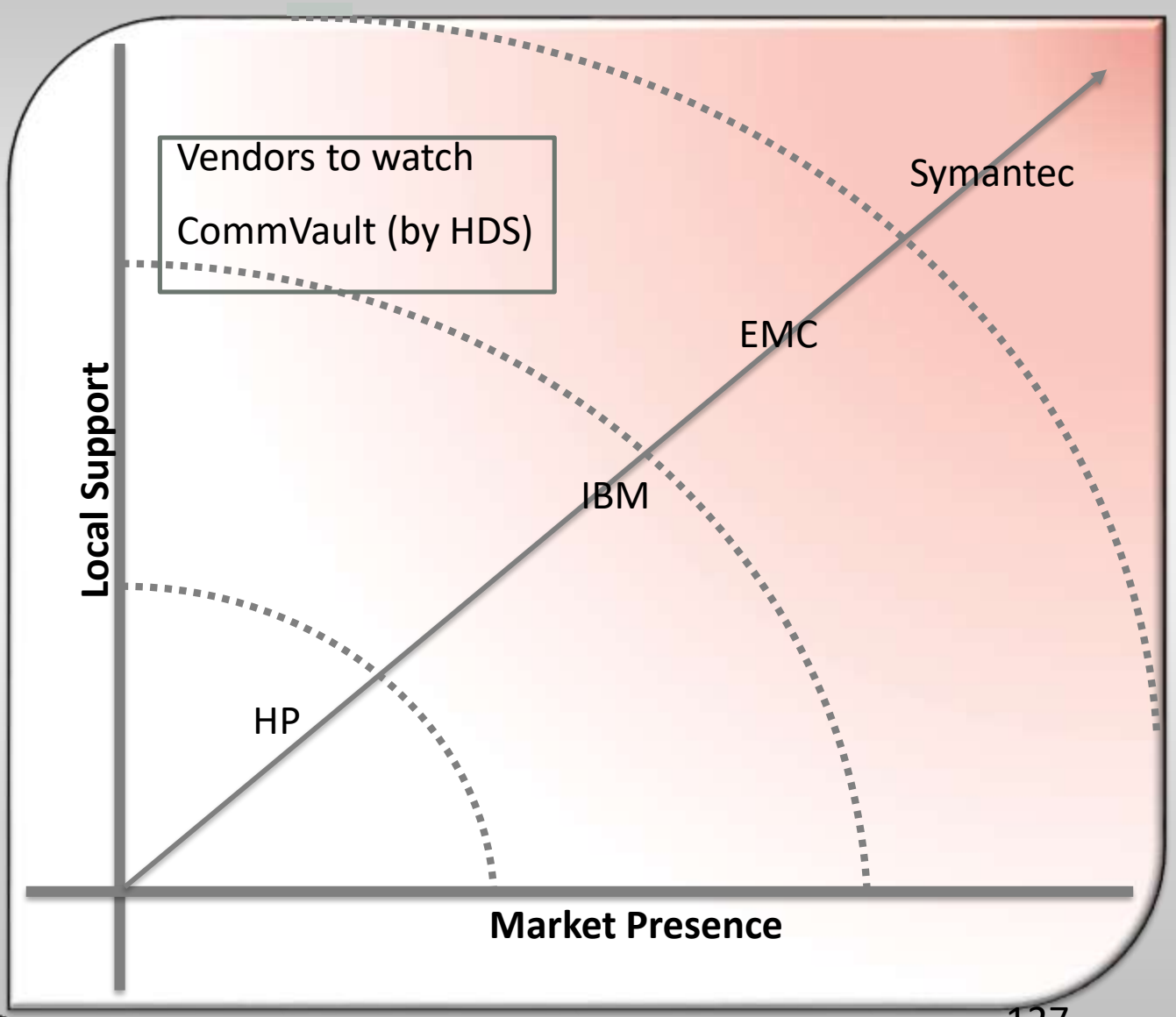
Enterprise Backup- Israeli Market Positioning 1Q12



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STKI on Storage

- Science is moving on : IBM scientists create the world's smallest magnetic memory bit using only 12 atoms.
- Storage growth will continue – this poses tremendous operations and management issues (quartos, tiers, etc.)

STKI RT 25.5

- New big data technologies will threaten the "central storage" concept
- FCOS is maturing. New datacenters are built based on FCOE.
- Scale out storage is the future. This also means commoditization (HW point of view).

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Selected Installations 2011-1Q2012 Partial List of selected wins –Storage

EMC- VNX: MOD, Clal, CAL, Harel, Cellcom, HOT, Bezeq Int., Mirs, Teva, Zim, Comverse, Verint, Ceragon, Super-Pharm, Strauss, MediaMind

VPLEX & VNX in Menorah

Avamar & DD in Cellcom

Networker & DD in Zim, Elbit & Phoenix

DD in SAP and Vishai

Isilon in Intel, HOT, Keshet, Nice, Bar Ilan

VMAX: Partner, Cellcom (upgrade), Bezeq (upgrade), Pelephone (upgrade), 012 (upgrade), YES , HOT , Bezeq Int. (VMAXe), MOD, Bank Mizrahi (upgrade), Bank Discount (upgrade), VISA Cal (upgrade), Clal Insurance (migration from Clariion), Menorah (upgrade), Harel (upgrade) , TEVA , ZIM (upgrade), IEC (upgrade), Comverse (upgrade), Maccabi Health Services (VMAXe)

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Selected Installations 2011-1Q2012 Partial List of selected wins –Storage

NETAPP (some via IBM) – FLEXTRONICS ,Paradigm , Microsoft, Imperva ,Isracard , YIT , Haaretz, KAKAL,

Hadassah ,Poria & Ichlov hospitals (PACS) , Tehila (GOV.IL), Ministry of Health, Conduit (upgrade), Better Place(upgrade), MER, Elbit, IAI, Rafael, Iscar Blades, Mei Eden, Dapy Zahav, Liman Shlisel, Postil, Teva

HDS: Migdal (upgrade), Mataf (FIBI upgrade), Channel 10, ITEAM (upgrade), Poalim (upgrade), NIS (National Insurance upgrade), TASE (upgrade), Open University (upgrade) , Brom Factories , Match Retail, Gama, Amdocs (VSP), Walla

Kaminario – IEC

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Selected Installations 2011-1Q2012 Partial List of selected wins –Storage

HP 3PAR: Netvision DSW , Netafim , Justice.gov, Amdocs, Tel Aviv Municipality, NTA (Netivey Techbura), Jewish Agency, Native Data, Kensho

HP LeftHand : Altshuler Haham, Israel Stock Authority, Bakara Geva, Shiryonit Hosem, Maanit Ktbutz, Internal Affairs.Gov, Haifa Municipality, Israel Police, Shagrir, Rupit College, Emez Izrael College, Egged Tiur, ECI, Ramat Gan Municipality, Amiad Irigation, Tehila,

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Selected Installations 2011-1Q2012 Partial List of selected wins – VTL\source-target DEDUP\Backup

Symantec (NB) – Ormat, PWC, Cal Oto, Delek, Nice, 012 Smile, Isracard (upgrade), Bezeq (ing), Petach Tikva municipality, Eliyaho Insurnace (pure disk), HOT (upgrade), Hani, Ayalon Insurance, Bank Israel (upgrade), Hadassa Hospital, Orbotech, Dan, Mei Eden, Haifa Port, Shastovitch, Diplomat, Israel Train

IBM TSM: Macabi Health, Leumit, Meuheded, Postal Bank

Commvault (OEM'ed by HDS): Bituach Leumi, Migdal, Meuhedet Health, Pelephone

HP D2D StoreOnce–Toto, Tnuva, Keter Plastic, Egged, Gov. Hospitals, Elyisra, Hadassa College,

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Storage Selected Vendors

	Bezeq Int.	TEAM / Malam/ omnitech/ netcom	Hilan (WE Ankor)	Glass House	CCC	Matrix	Bynet	**EMET**	ONE1	Taldor	Benefit
EMC	x	x		x			x		x		
IBM	x		x		x	x		x	x		
HP		x				x			x		
NETAPP		x	x	x				x	x	x	
HDS	x									x	x
Kaminario						x					

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Selected Vendors and SI's in Israel – Enterprise B/R

Vendor	EMET	Glass House	Team Malam	Matrix	Hilan	One1	Terrasky	Simplimentia	Taldor
HP DP		x	x						
EMC Legato		x		X		x	x		
Symantec (NB)	x	x	x		x			x	
IBM TSM				X	x				
Commvault (HDS oem)		x							X

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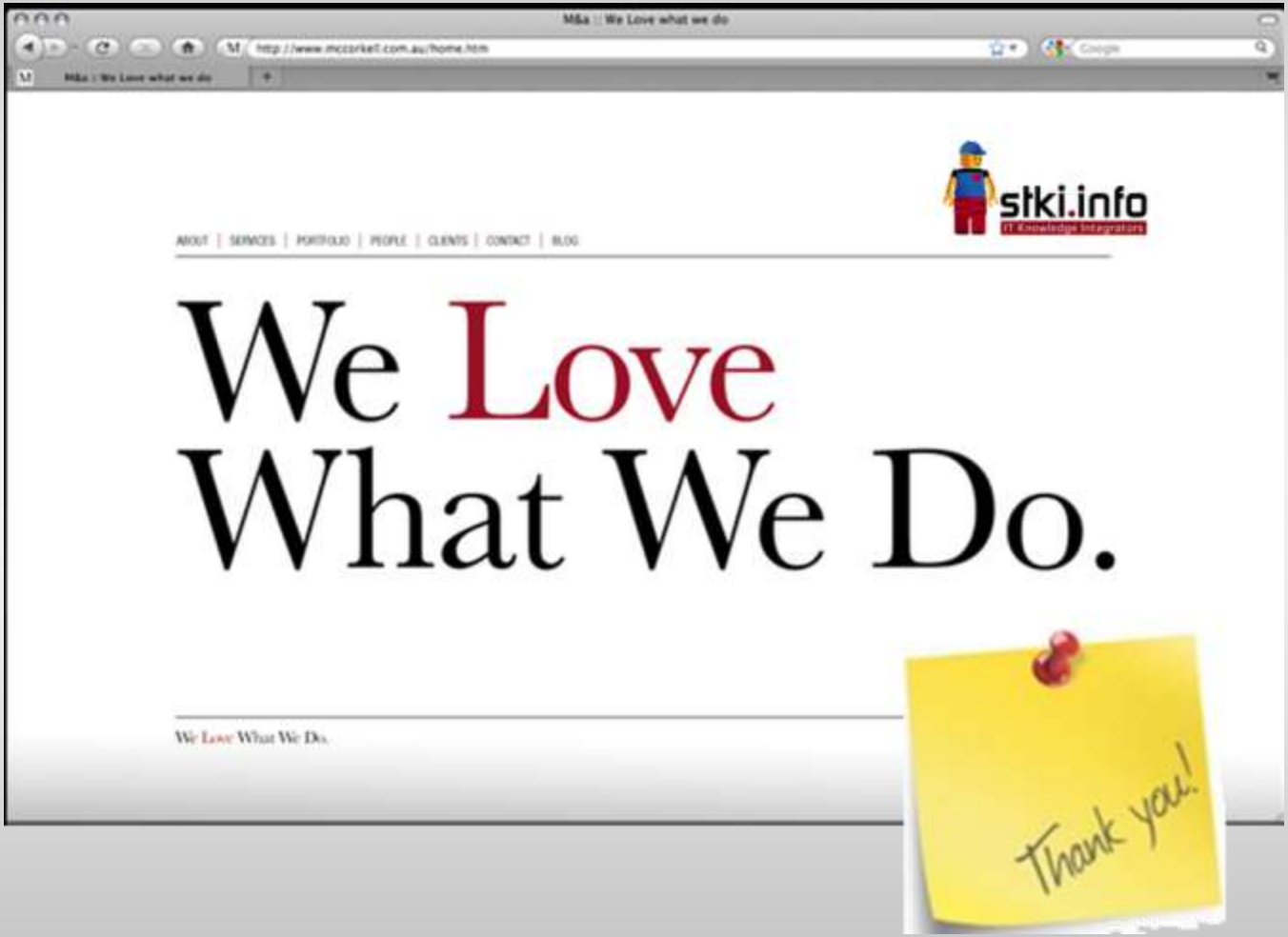
Thanks for your patience and hope you enjoyed



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