BUSINESS PROCESS MANAGEMENT SUITE (BPMS) MARKET CHANGES 2009–2015

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IT tools supporting the BPM approach developed rapidly in the last 10 years. Initially were available simple solutions for modeling and optimization of business processes. The next generation has offered business process implementation and monitoring in the real environment of the organization. Finally user requirements forced vendors to add a bit of "intelligence" to their applications and iBPMS entered on the market. The iBMPS market is still immature but some trends can be seen. The source for such analysis can be found in analytical reports provided by renowned research and advisory companies. In this paper was presented analysis of BPMS and iBMPS markets based on Gartner's Magic Quadrant reports from years: 2009, 2010, 2012, 2014 and 2015.

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1. Introduction

Business Process Management (BPM) is an approach that let to improve corporate performance. Usually it needs accurate IT support that let to model, design, implement and analyze business processes in the organization.
Evolution of IT tools supporting BPM shows three classes of applications:
- Business Process Modelling (BPM) products
- Business Process Management Suite (BPMS) products
- Intelligent Business Process Management Suite (iBPMS) products.

2. IT tools for Business Process Management

Business Process Modelling (BPM) tools allow to model business processes using well-known standards and notations (e.g. EPC, BPMN, UML) and optimize them on the base of pre-execution simulations and post-execution analysis of metrics.

Business process management suite (BPMS) can be defined as "application infrastructure to support BPM projects and programs". Such application supports the entire process improvement life cycle:

- process discovery and its modelling
- design,
- implementation,
- monitoring
- analysis and continuous improvement.

Basic functionality of BPMS [1] includes:

- support the modelling and analysis of business processes (including tasks/activities, roles, decisions/logical operators, flows, collaboration, events, goals, etc.)
- support process change, in modelling, implementing and execution stage with history of changes
- coordinate every type of interaction patterns (human2human, human2system, system2system) among user tasks, system tasks, internal and external data resources
- enable participants do use (read and write) information within instances of business processes assigned to them
- support the definition and management of business rules and business logic
- support collaboration during process design and redesign
- support notification of activities and events for participants
- support the monitoring and reporting of transactions and business process instances
- support process simulation and optimization on the base of statistical/estimated, historical and real-time data
- ability to integrate with external assets/applications using Web Services (SOAP, REST)
- ability to interoperate in Service Oriented Architecture (SOA) paradigm
- ability to store process artifacts (e.g. models, process and rules definitions, services etc.) to reuse them in different processes
- support designing of user interfaces (UI) for user tasks.

BPMS expands functionality of pure-play Business Process Modelling tools by process implementation and monitoring. But sometimes BPMS solutions were unable to address new challenges – increasing data volumes, rapid change od business environment, complex real-time decision-making capabilities and they evolved to iBPMS (intelligent Business Management Suite).

Intelligent Business Process Management Suite (iBPMS) - according to Gartner Group - "expands the traditional BPMS by adding the new functionality needed to support Intelligent Business Operations (IBO), such as real-time business analytics, deep complex-event processing (CEP), social media to support social behavior and collaboration, and expanded technologies to support growing requirements for mobility".

Extended functionality of iBPMS includes [3]:

- real-time business analytics to improves decision-making process
- complex-event processing (CEP) to analyze high volumes of data
- expanded analytical capabilities in business activity monitoring (BAM)
- mobile tools interface to provide access to platform from every place
- social media interface to use context and social data in business process logic
- integration with on-demand analytical predictive (statistical) and simulation tools
- access to new information sources including video, audio and social streams.

Evolution of IT tools for Business Process Management Tools and market trends are clearly visible in reports provided by consulting companies as Gartner Group and Forrester Research.

3. Gartner's Magic Quadrant

Gartner Inc. was founded in 1979, and now is the world's leading information technology research and advisory company. One of well-known analytical methodology provided by Gartner is Gartner Magic Quadrant.

A Magic Quadrant gives graphical positioning of technology providers divided into four types:

- Leaders providers that "execute well against their current vision and are well positioned for tomorrow"
- Visionaries providers that "understand where the market is going or have a vision for changing market rules, but do not yet execute well"
- Niche Players providers that "focus successfully on a small segment, or are unfocused and do not out-innovate or outperform others"
- Challengers providers that "execute well today or may dominate a large segment, but do not demonstrate an understanding of market direction".

4. Market trends between 2009 and 2015

4.1. BPMS changes to iBPMS (2010-2012)

In 2010 Gartner presented its final report for BPMS tools (fig. 1). In this report 9 vendors were classified as "leaders", 10 vendors as "visionaries". In total – 27 vendors were included in the report.
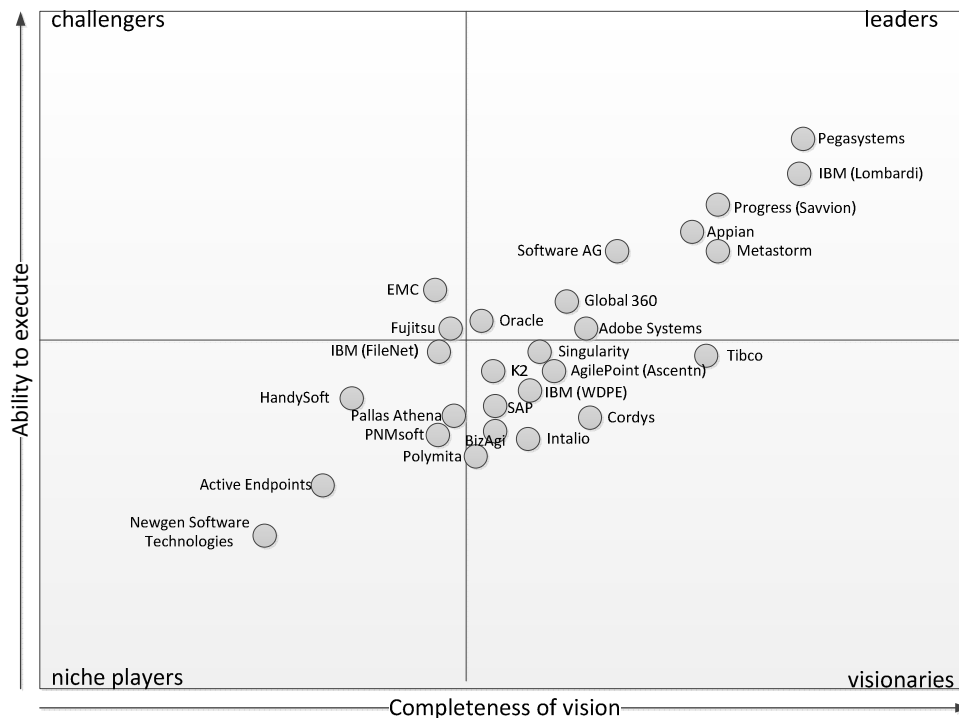

Figure 1. Gartner's Magic Quadrant for BPMS at 2010 [2]

But 2 years later, when Gartner presented the first report for iBPMS (fig. 2) only 13 vendors (including fact that Lombardi was acquired by IBM in 2010 and its software was integrated with IBM WDPE as IBM BPM package) met inclusion criteria. It means that only about 50% of vendors changed functionality of their systems to offer "intelligent" BPMS.

588

Figure 2. Gartner's Magic Quadrant for iBPMS at 2012 [3]

In 2012 only 3 vendors were classified as "leaders":

- Pegasystem (PegaRULES Process Commander PRPC v 6.3)
- Appian (Appian BPMS v.6.6.1)
- IBM (IBM BPM 7.5.1)

Two former BPMS leaders (Oracle, Software AG) were classified as "visionaries" and one former "visionary" (Cordys) moved to "niche players" class. Such situation shows that transformation from BPMS to iBPMS is not easy and obvious even for big, well-known vendors.

4.2. Growth of iBPMS (2012–2015)

Between 2012 and 2015 Gartner has presented 3 reports for iBPMS. On this base can be shown changes in vendor's positioning (fig. 3).
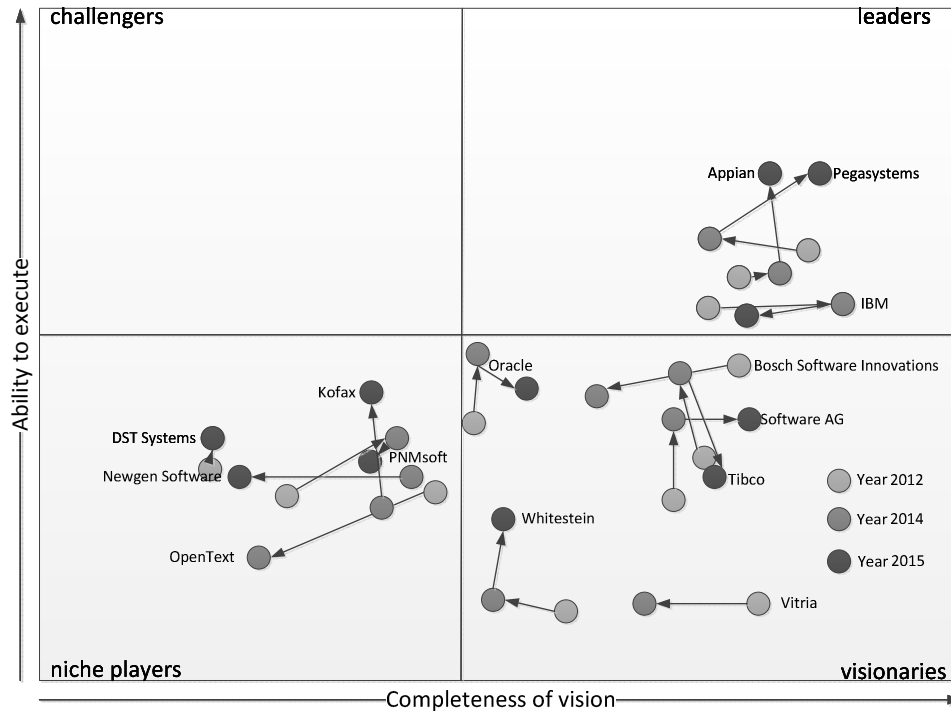

Figure 3. Positioning of iBPMS vendors 2012 – 2015. Source: own preparation on the basis of Gartner Group materials

In those reports were no changes in the list of leaders but their positions changed notably. Pegasoft and Appian significantly increased factor "ability to execute" and IBM BPM had this factor on the constant, low (for leader) level. On the other hand, in this class was no clear direction of change of the second factor ("completeness of vision") – e.g. for IBM this factor grew in the first period (2012-2014) and declined in the second period (2014-2015) but for Pegasystems declined in the first period and them came back to the start level in the second period.

In the "visionaries" class the set of vendors has not changed as well. Three most famous vendors nearly maintained their positions - Oracle moved on the border between "leaders", "visionaries" and "niche players", Software AG improved its application year by year in both directions, Tibco kept its "completeness of vision" but changed (up and then down) "ability to execute".

4.3. Overall market change (2009–2015)

Analysis of reports from 2009 and 2015 lets to compare positioning of vendors who were present in both reports (fig. 4).
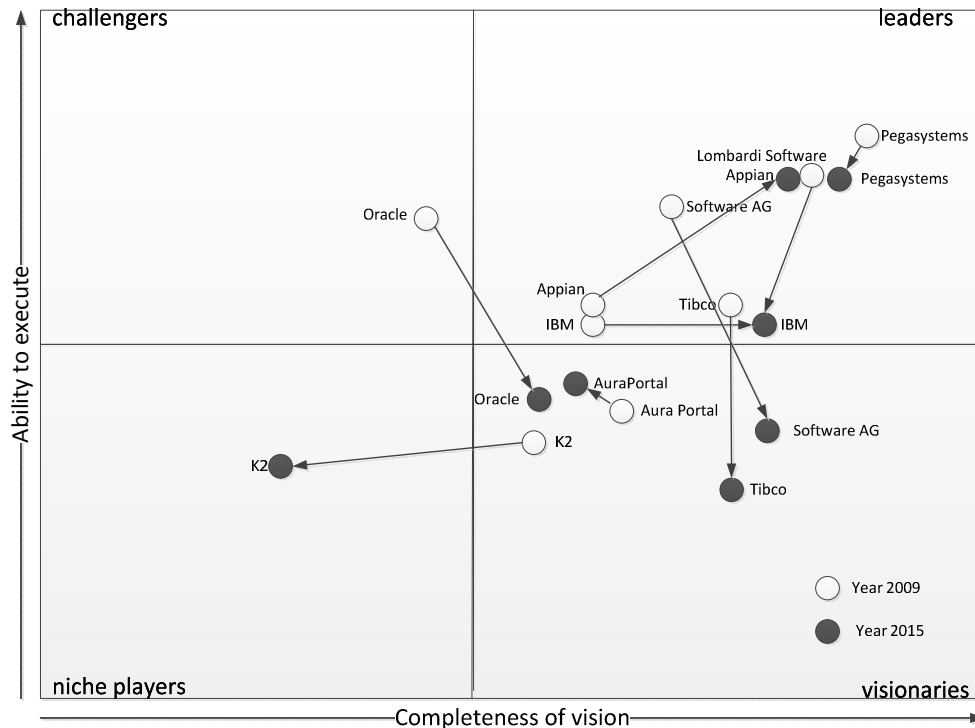

Figure 4. Comparison of BPMS and iBPMS markets in 2009 and 2015.
Source: own preparation on the basis of Gartner Group materials

Pegasystems is still classified as "leader" but its position on iBPMS market is slightly lower than on BPMS market.

Appian significantly improved its position in both dimensions and to become a real leader on the iBPMS market.

IBM improved its position in terms of "completeness of vision" but "ability to execute" is similar in 2009 and 2015.

Oracle was in the "challenger" on BPMS market but on iBPMS is classified as "visionaries".

Tibco and Software AG lost their positions and on iBPMS market are only in "visionaries" class.

5. Conclusion

Modern IT tools supporting Business Process Management approach can offer a wide range of functions. The key elements of today's iBPMS applications are [5]:
- Process Orchestration Engine
- Graphical Model-Driven Composition Environment
- Content Interaction Environment
- Human Interactions
- On-Demand Analytics
- Process Intelligence and Business Activity Monitoring
- Business Rule Processing
- Connectivity
- Management and Administration
- Registry/Repository.

According to the newest Gartner's report three vendors offer product with high ability to execute and high completeness of vision. Analysis of previous reports shows that those vendors (Pegasystems, Appian and IBM) are only leaders for last 4 years. Analysis of the trends indicates that there is no reason to think that any other vendor will advance to the "leader" class soon.

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