High Level Comparison of SAP PI and MS BizTalk

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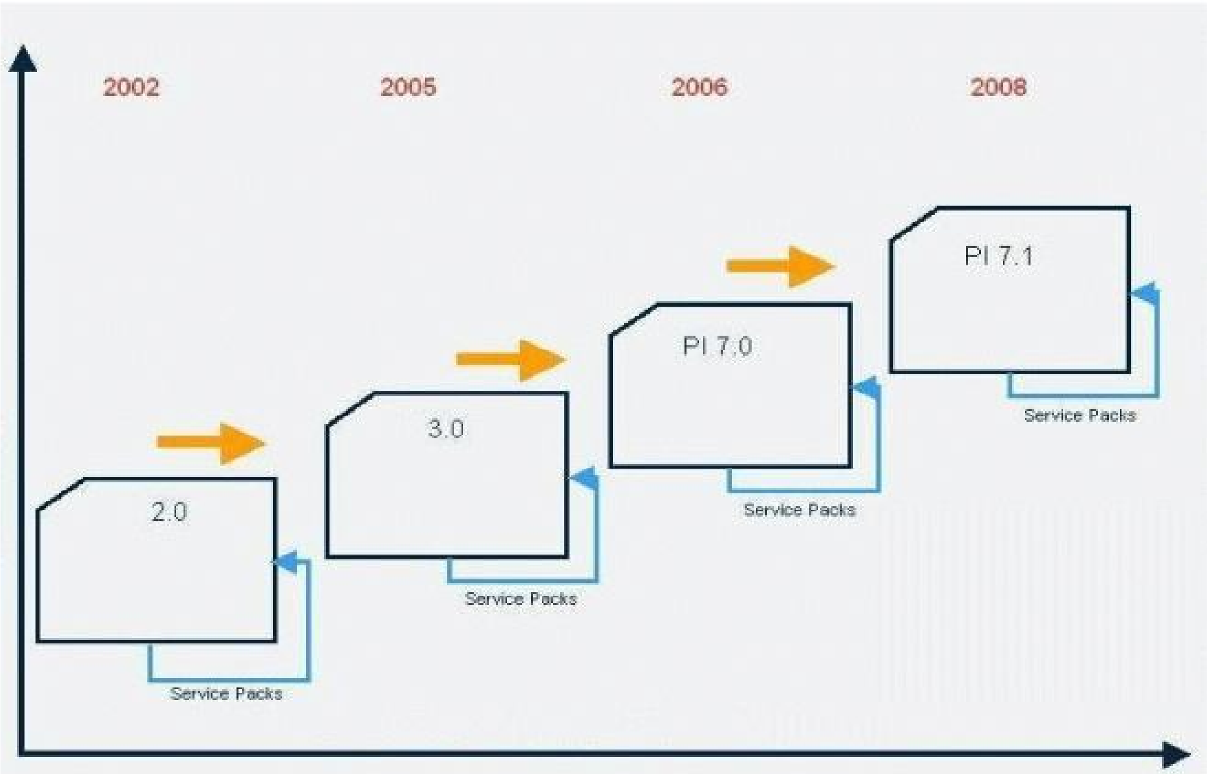
By the beginning of 2009, adoption of SAP PI platform is growing rapidly, primarily for SAP's application base customers. However, despite SAP's crucial improvements PI is still lacking of most-advanced platforms abilities, but any way it will still be used commonly by SAP customers.

Graph below, shows the roadmap of SAP PI starting from the first version (SAP XI). From my point of view, there are 3 major versions of this product. Phase 1 was SAP XI 2.0-SAP XI 3.0, phase 2 was SAP PI 7.0 and phase 3 is SAP PI 7.1. In fact SAP invested a lot of engineering hours for PI and tried to provide the most up to date features in it. But like all the other products in integration platforms market, PI has some pros and cons.



Graph 1: SAP PI product versions

In particular, SAP PI is proven for SAP oriented middleware and is widely used by SAP customers. According to a statistic from SAP, only 2-3% of the PI or XI users are non-SAP customers. So, it clearly shows that PI is very SAP centric product and fits better to SAP product portfolio.

On the other hand, well known vendors like IBM, Microsoft, Tibco, Sun Microsystems are functionally richer than SAP PI because they focus not only to SAP but also to other application packages. For example they provide much complex event processing, business activity monitoring and other advanced integration features. However, PI is highly optimized for SAP systems and provides a lot of pre-built integration metadata and it is more similar to SAP systems.

SAP PI license for SAP-to-SAP usage is included in NetWeaver suite license and MySAP license. For SAP to Non-SAP integration PI base engine is priced based on the overall processed message volume expressed in Gigabytes (GB) per month. For some large SAP customers, special discounts are available and price mentality of SAP is “more you use less you pay” (we can also call it progressive scale). As far as I have found in real life cases, it is really expensive to use PI for SAP-NonSAP or NonSAP-NonSAP connections. Also, it requires lots of memory and CPU power.

To match which are is the place to compare PI with Microsoft BizTalk, please refer to the graph 2 below.

	SAP	**Microsoft**
Integration Platform	NetWeaver	.Net and Microsoft Server Products
Process Integration	SAP PI	MS BizTalk
Portal Solution	NetWeaver Portal	MS Sharepoint
Application Server	Web Application Server	MS .Net, Indigo
SOA Architecture paradigm	Enterprise Service Oriented Architecture (eSOA)	SOA on Basis of .NET and BizTalk

Graph 2: SAP PI and BizTalk Functional Coverage

It is crucial to understand the companies’ application landscape and then make a final decision to go for one integration platform. Because it is really difficult to say PI is better than BizTalk or vice versa. For example, many large SAP customers already selected an integration platform. But, they also know that PI (XI previously) is required component of SAP application landscape. Therefore they try to understand the product and decide how much they are going to use it. As far as I see on the market, they are introducing SAP PI along with their established integration platform, mostly to support SAP-to-SAP integration scenarios. For example replacement of Business Connector BC[1] is a perfect business case as a starting point to use PI, because of the fact that PI can be more cost effective. Where this looks like an advantage, most of the companies do not want to deal with two different integration platforms. In this case, if a company wants to adopt their integration platform strategy with SAP, gradually moving to SAP PI is the best way to go for. Because, from my point of view, SAP NetWeaver PI 7.1 will have another major change in it and this can cause serious problems for old interfaces. In addition to this, it is for sure that replacing all BizTalks with PI is not really a strong case, because PI is still not the perfect product and needs a bit more real life cases.

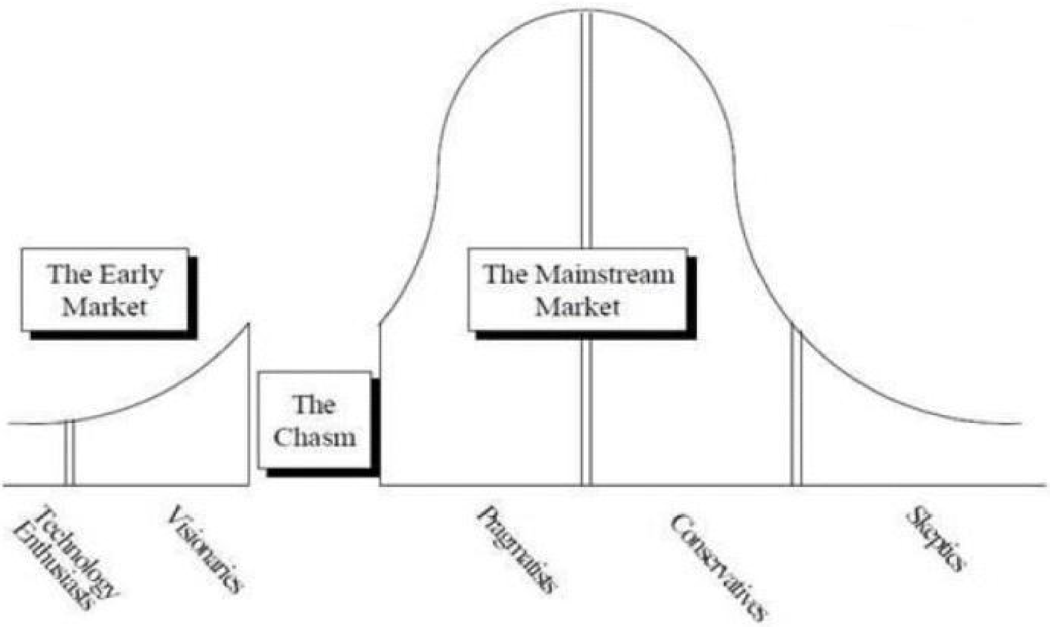
As a well known framework on the market, Technology Adoption Life Cycle is a good tool to position the SAP PI and MS BizTalk to show which market segments they are able to reach on the market. For my case, since I compare only SAP PI and Microsoft BizTalk, I will not consider other tools available on the market.

TALC model gives clear guidance on how to create market for a discontinuous innovation, which force a significant change of behavior by the customer. Changing integration platform in a huge company is also a destructive change from the already established competence, strategy, vendor lock in effect and investment point of view. The basic flaw in the model is that implies a smooth and continuous progression across segments over the life of a product. The high-tech marketing guru Moore (Reference: Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Customers – by Geoffrey Moore, Regis McKenna) offers time-tested insights into the problems and dangers facing growing high-tech companies and products, and a blueprint for survival. This classic text (first published in 1991) is widely accepted as “the bible for bringing cutting-edge products to progressively larger markets.”

[1] SAP Business Connector (also known as "SAP BC") is a re-branded version/restricted licence version of webMethods Integration Server provided by SAP as a middleware solution for their R/3 product. It was the result of a partnership which began in 1999 between webMethods and SAP in order to provide an integration platform capability to SAP.

The role of the SAP Business Connector is to provide XML/web services type integration between SAP instances or from SAP to 3rd party system/B2B (as the platform had no similar capabilities).

SAP has since developed its own integration/middleware product (SAP Netweaver PI) so the SAP Business Connector product line was frozen at version 4.7 for some years. But in July 2008, SAP released a new SAP BC version 4.8. This version can be seen as a maintenance update to support newer JVM's and operating systems.



Graph 3: Technology Adoption Life Cycle

Moore says that in fact, there are cracks in the curve, between each phase of the cycle, representing a disassociation between any two groups; that is, "the difficulty any group will have in accepting a new product if it is presented the same way as it was to the group to its immediate left". There can be small size crack between each step and also inside every segment. But, the largest crack, so large it can be considered as a chasm, is between the Early Adopters and the Early Majority. Many (most) high tech ventures or products fail trying to make it across this chasm.

In fact this tool is widely used by companies to evaluate the market segments and position themselves. But today I will look at this picture from customers' point of view and position SAP PI and BizTalk into the TALC to show the differences. But before doing that I would like to give you the characteristics of the each market segment.

Innovator = Technology enthusiasts

- Pursues new technology aggressively, often for its own sake.
- Will overlook all kinds of short falls in the deliverable.
- Easiest buying population to satisfy: want the truth, access to top technical support, first to get hands on new stuff, and want low cost (cheap).
- Gatekeepers to the life cycle and they like being “cool”
- If they hate it implies trouble.

Early Adapter = Visionaries

- Not technologists but appreciate the benefits of new technology. However, need more help than Innovators.
- Believe in competitive advantage via discontinuous innovation – use technology to leapfrog competition
- Bring money to table but demand modifications
- The least price sensitive of any user category.
- Easy to sell and very hard to please.
- Want to see “productized” technology.
- Always in a rush but contract closure is next to impossible. Each additional visionary has a unique dream and makes unique demands for customization, which in turn overtaxes an already burdened development group.
- Optimum solution is to identify a single compelling application and focus entirely on that solution.
- This is the sector where a competitor first materializes and you better be across the chasm by then.

Early Majority = Pragmatists

-Similar to Early Adapters but far more practical and pragmatic. Aversion to risk, wants a proven solution.

- Insist on seeing well-established references of other Early Majority users.
- Not intimidated by technology, but will not pursue technology for technology’s sake.
- Believe in evolution not revolution
- Use marketplace wisdom to see what’s valuable and then be a fast follower
- Want to improve organizational effectiveness
- Prefer to buy from market leaders

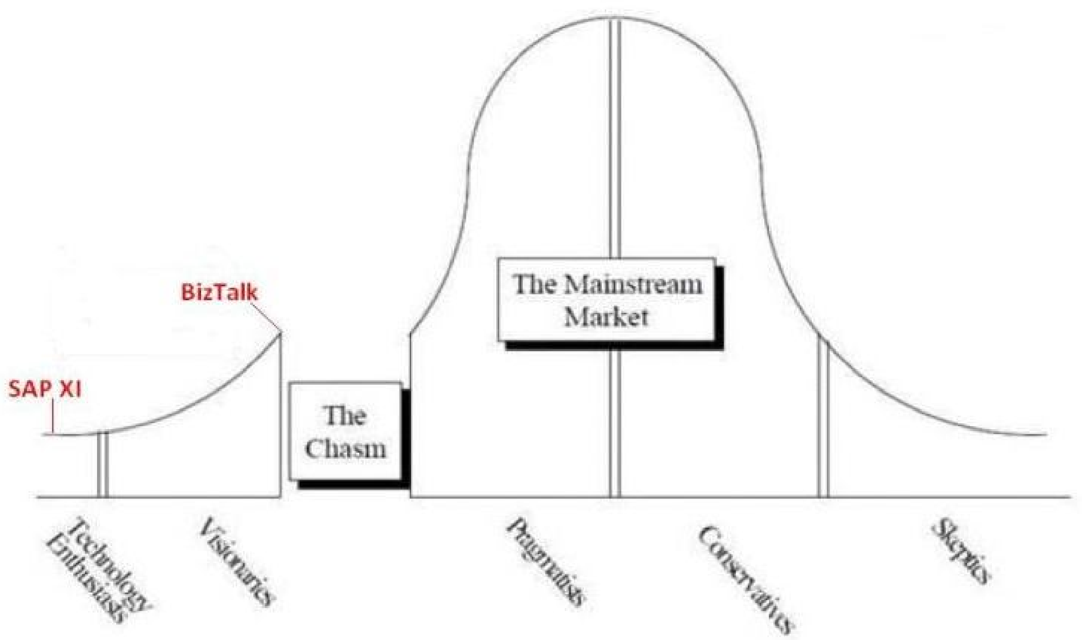
Late Majority = Conservatives

- Similar to Early Majority
- They are not confident in their ability to handle a technology product.
- Switch only when technology fully debugged
- Delay may cause them to lose out in long run

Laggard = Skeptics

- Want nothing to do with technology and not worth the trouble to try to convert.
- Refuse to adopt; works only when technology “fails”
- Tend to “fight the use of new technology.”

After all, let’s position SAP PI and MS BizTalk on TALC. If I were doing this research about 2002-2003 I would position these two integration platforms as graph below. So, I believe that during 2002-2003 SAP XI (PI is the current name of this product) was only able to reach innovators, technology enthusiast segment of the market. On the other side of the picture, BizTalk was a bit more mature than XI during 2002-2003, and was able to reach early adopters segment. Then remember what happened when upgrading from BizTalk 2002 to BizTalk 2004? Most of the customers had to re-write their interfaces from scratch and this is what I believe helped BizTalk to cross the chasm. An important point here; SAP PI still did not live such a big change and I believe SAP will make a major change in PI. For example; PI is a dual stack product which requires both ABAP and Java. For sure, it will not be the best product when we think about SOA point of view. Because SOA recommends interoperability, openness and industry standards. So, I think they will get rid off ABAP stack and write ABAP part in Java from the beginning. They can also make an OEM agreement with one other middleware vendor in the market. One way or another, there will be a big change in the product, and then we will see if they will be able to cross the chasm.



Graph 4: Positioning of PI and BizTalk at TALC on 2002-2003

From 2002 to 2009, lots of things happened on the market and vendors invested lots of engineering hours to make their technology widely used by each customer segments. By the beginning of 2009, BizTalk is in the market for almost 10 years but PI is for 5-6 years. As far as I know, BizTalk has 8000 active customers, who use BizTalk as their integration platform in real life and SAP PI has about 2000-2500 active users. For PI it is not a bad number, but the problem is that; 97-98% of them are SAP customers.

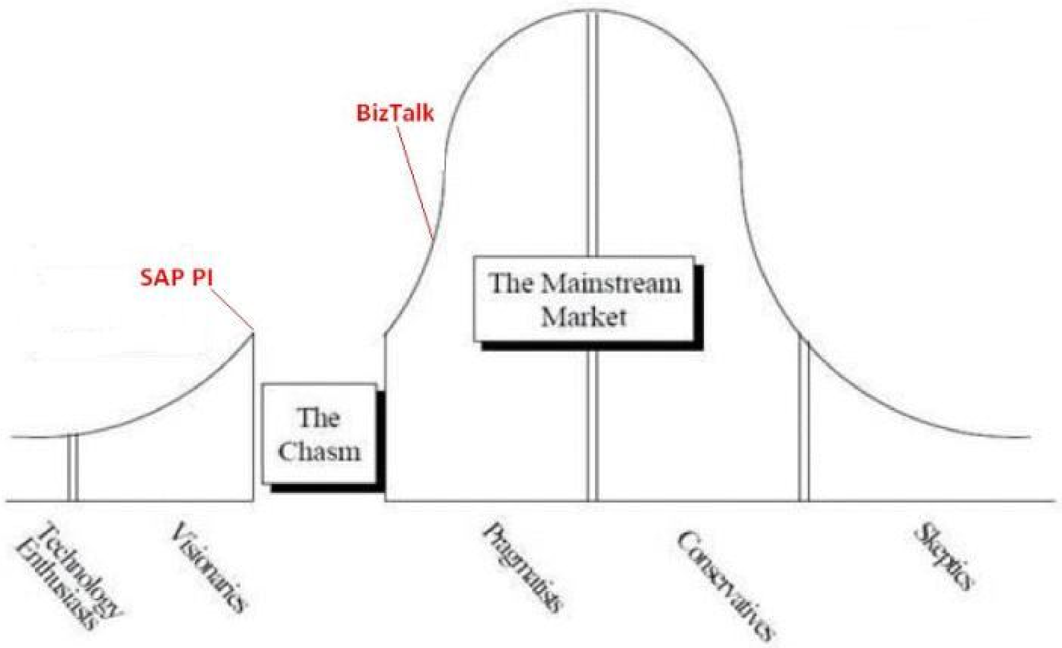
Both vendors are straggling to provide easy, open standard based fully compatible products. All in all, I placed SAP PI 7.1 and Microsoft BizTalk Server 2006 R2, which is an update release to BizTalk Server 2006 that includes some new and updated features that enhance the capabilities of BizTalk Server, on TALC as you can see from the graph 5. From my point of view MS BizTalk is a bit more successful in the market and reached to the early majority, which means to mainstream market. On the contrary, SAP PI 7.1 is getting ready to cross the chasm. But, how this will happen? I foresee two options;

1- SAP will outsource PI to some other middleware company but will continue to development of this product. Because they already sold PI to 50% of their large SAP users and they cannot just stop supporting this product. Also, PI is playing a centric role for SAP's ESOA strategy. So that, if SAP wants to be successful on this, they have to pay more attention to integration since this is one of the most crucial part of ESOA mentality.
2- SAP will buy another middleware company and add their technology to SAP PI and make it much more better product.

I think there are two major things that SAP wants to do.

1- Make PI 100% Java based product. It means, they will re-write the ABAP part or make an OEM agreement to replace with an already available solution in the market.
2- Currently, PI is based on a hub and spoke architecture. But because of the ESOA strategy they want to make it more distributed architecture. So, this will also cause a major change on product.

So, it is important to keep all these in mind before making a buying decision. As I mentioned before I expect a radical architectural change on PI rather than an incremental evaluation. So to mitigate the risks, it is recommended that be careful where you use PI and try to use it within SAP landscape and for opportunistic applications, which means not mission critical ones. Also, make a good calculation about ROI. If it is 10 years, I personally do not recommend changing your already established integration platform.



Graph 5: Positioning of PI and BizTalk at TALC on 2009

After all, both integration solutions have bad news – good news situation. As PI adoption grows, SAP will invest more into this technology. But if they want to reach into the main market they have to enrich the functionality of their solution against competing integration platforms. Because current picture clearly shows that PI is dominantly used only by SAP customers. While this can be seen as a success, there are still lots of miles to go for SAP. From SAP's point of view, if a company invest in SAP most probably they will try to integrate third party applications or internally build applications into SAP. So there is where SAP plans to make money from PI. Otherwise it is free to use for SAP-to-SAP integrations. This is an another evidence that PI is highly optimized for SAP.

As a summary;

Product Strengths:

- Part of NetWeaver application packet
- Highly optimized for SAP to SAP integrations

- Prerequisite for some SAP applications and for ESOA
- Infrastructure of some SAP products for example BM, DM, Auto-ID

Challenges:

- Synchronous scenarios and large file sizes cause performance problems
- Needs lots of memory and CPU power
- Very high TCO if you use it outside SAP landscape
- Smaller market share than leading competitors
- Not a perfect product yet and needs more successful user cases
- Unclear roadmap

Consider SAP PI when:

- Looking for integration of SAP systems
- Have some plans towards SOA