White Paper

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The value of installed base knowledge & its challenges

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Abstract

In today's world, the value of install base knowledge is largely ignored as a corporate asset. More than just a supporting entity its accuracy is foundational for revenue realization and reducing the cost of service. It can be viewed as "the keys to the kingdom" for true excellence in CRM. However, the challenges in creating and maintaining accurate knowledge of the products that a customer owns cannot be understated. These challenges can be addressed if a holistic approach is taken that encompasses the life cycle of an installed product.

Almost all companies store some information about their customers and the products they have purchased. For some companies that sell high value products, this information can also include where these products are, or more accurately as we will discuss later, where they think they are installed. This installed base knowledge can range in content from simple product information to detailed configuration information. In the high tech arena this product information can include software products and their revision levels.

The fact that many leading companies consider this knowledge to be a corporate asset that needs to be rigorously managed underlines its importance in growing service revenue, obtaining efficiencies in service delivery, and enabling future product sales. These leaders understand that Installed Base Knowledge holds "the key to the kingdom" in achieving excellence in customer relationship management. And yet for many companies, this knowledge asset is overlooked in their strategies and key initiatives and as a result, the full realization of their business goals is all too often compromised.

Installed base knowledge & its roles in achieving excellence in CRM

Installed base knowledge is one of the foundational "keys to the kingdom" of excellence in CRM. It directly influences customer interactions, service revenue, and service delivery and planning. Indirectly, it enables an evolving product strategy and the marketing and sales of new products. Installed base knowledge influences how a company can respond to the voice of the customer from two perspectives:

- "Know who I am and the products I own"
  Central to the success of any CRM strategy is the knowledge of who your customers are, the products they own, and the service entitlements for those products.
- "Think of me even when I don't call you"
  Increasingly, customers are coming to expect that updates and product notices will be automatically provided to them. The ability of a company to include in this CRM strategy the delivery to customers of unsolicited but relevant information is no longer a leading practice but 'table stakes' in a highly competitive landscape.
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Customer Experience

Simply stated when customers call you they expect you to know them. If you have to continually ask the customer for information about who they are and what product they are calling about the experience is diminished. It conveys that you only want a transactional relationship and not a product relationship. An example of this is a major PC manufacturer whose call center staff, was measured on "average handle time". Due to the time it would take to search for a customer the staff almost always created a new customer record whenever a customer called as this was faster than searching. The result was tens of thousands of duplicate customer records. One outcome was a gradual reduction in overall customer satisfaction scores that led ultimately to a loss in market share. Another outcome, just as significant from a revenue perspective, was the inability to effectively sell service contract renewals.

Service Revenue

For those companies that use customer service as a strategic profit center the role of accurate Installed Base Knowledge is critical to fully realizing the potential service revenue from an installed product base. This potential cannot be understated. Consider the following:

- It is generally agreed in the analyst community that the revenue potential for a product with a service life cycle greater than 7 yrs. is 10 to 12 times its acquisition price. Thus a product with a $100,000 acquisition price has the potential to produce $ 1 million in service revenue.
- It is not uncommon for companies with a service organization to realize profit margins between 30 and 60%.

But the promise of this revenue stream cannot be fully realized if the accuracy of the Installed Base Knowledge is so low that it is not trusted by those who are responsible for selling and renewing service contracts. This accuracy issue has a corresponding negative impact on the cost to administer service contracts, funding the service organization, and, as we have seen, an impact on the customer experience.

Service Planning

Trying to forecast your resource requirements by using history without an accurate understanding of demand is like "trying to steer your boat by looking at its wake". Eventually you may find yourself on the rocks. And this is very much the challenge of planning service resources without some accurate knowledge of your installed product base. Knowing what skills you need, the service parts stocking levels that will be needed, requires that you have a somewhat accurate understanding of your installed base. From an operational perspective there is also the challenge of planning for the implementation of "Field Change Orders" (product engineering changes) particularly those that are mandatory. Implementing these can cause tens of thousands of dollars in field audits if the accuracy of your installed base knowledge is in question.

What is the reality of install base knowledge and the challenges to its improvement?

Unfortunately, we do not live in an ideal world and our knowledge of the install base is generally not as accurate as it should be. In fact when visiting call centers or talking to field engineers we often hear the phrase "we give it away quicker". Or, when asked how often they update the installed base knowledge service personnel will tell us that they try but nobody at corporate really cares. These comments only confirm our estimate that across the manufacturing segments the accuracy of the installed base knowledge can vary by a wide margin from a low of 40% to a high of 80%. While there can be many reasons for this and they vary from company to company, we have observed a number of common issues that should be explored. We have divided these issues into two groups: foundational issues and process issues.

Foundational issue #1: The lack of a clear strategy for maintaining installed base knowledge

Without a corporate strategy, installed base knowledge becomes a jigsaw puzzle where the pieces are never really joined together. The sales organization knows what it has sold. Manufacturing knows what it has been built and shipped. Service knows what products it has installed and/or supported. But to obtain an accurate picture you need to bring these puzzle pieces together. An interesting aspect of these puzzle pieces is that they represent the continuum in the life cycle of a product beginning with its sale and concluding with its eventual de-installation. Now, many will immediately leap to the notion that this is solely a technology challenge that calls for a common database and master data management. However, it has been our experience that this is putting the cart before the horse. For Technology enables strategy and cannot succeed

without goals and organizational alignment. The goals should be cross organizational and should be linked to creating shareholder value.

Minimally an installed base knowledge strategy should be able answer the following questions:

- What products to track?
  There are companies who will try to track every product they produce regardless of their value, complexity, and service life cycle. Just because a product is serialized, it does not necessarily mean it should be tracked. Leading companies have abandoned the 'we track everything' approach as it is rarely successful with little cost benefit. Rather, they look at the value proposition of tracking the products. This leads us to the next question.

- What are the attributes of the tracked products?
  What information do you really need to capture to realize the value proposition from tracking the products? Many companies will go overboard trying to capture every tidbit of information about an installed product without asking the seminal question: "what is the value of this information?" Every attribute of the product will have a cost associated with its capture. If the value of the information does not justify the cost, then why do you want to capture it?

- How will this work? –
  In developing their strategy many companies do not acknowledge the reality of what it really takes to maintain some level of accuracy of their installed base knowledge.   While it is acknowledged that we want to update the installed base knowledge as a by-product of other processes such as the shipment of a product or the closing of a service request, many companies fail to acknowledge the need for process collaboration between organizations or the level of administration needed to maintain the accuracy of the installed base knowledge.

Foundation issue #2: Multiple product nomenclatures

One of the biggest challenges that companies face is in dealing with the different nomenclatures for a product and the cross-referencing of those nomenclatures. Marketing and Sales promotes solutions that can be a bundling of hardware and software products. Using marketing identifiers as the nomenclature, products are advertised in catalogues and referenced in the quoting process with this identification. Manufacturing then translates these into part numbers and manufacturing BOM's and sales administration identifies the support services being purchased. Finally, service gets involved with the product and must associate each of the major components to either a part number, or in some complex instances, as a service identifier. Therefore each of our puzzle pieces of installed base knowledge can potentially have a different way of referencing the installed product. When this occurs the user, be it the field engineer or the contracts administrator, needs to be able to translate one nomenclature to another. This can often lead to additional work or to errors.

Foundation issue #3: Data governance in updating

There are two aspects of this that we often find: one, data governance in terms of the business roles who are allowed to update the installed base, and two in the harmonization of update processes in a global operating environment where copies of the installed base knowledge are distributed on a regional basis, yet centrally used for planning, compliance reporting, and the auditing of service contracts.

For some companies the installed base knowledge is treated almost as a white board allowing general users with "read/write" access to apply changes and updates without any approval or verification. More often than not, many of these users have limited training and are not aware of the need to research proposed changes prior to applying them. For example, allowing changes to a product Id or installed serial number can have a ripple effect in terms of contract entitlement and the potential creation of a duplicate instance of the installed product. This can also result in considerable work later to resolve the duplication or mismatches between the installed base knowledge and the service contract.

Decentralization of the installed base knowledge often results in challenges relating to process harmonization. Groups in different countries will interpret process guidelines differently or there is a lack of consistency in training the different roles

responsible for updating the installed base. This lack of process harmonization can also extend to a lack of commonly defined metrics across regions resulting in further confusion in calibrating the success of local processes.

Process issue #1: Disconnected and/or inconsistent processes

Updating and maintaining the installed base knowledge should be viewed as a set of independent but collaborative processes that cross organizational boundaries. As the product progresses through its life cycle from order to fulfillment to installation and service, the processes should be contributing to the information about the product, recording and validating updates. However this symbiotic process relationship is quite often not the case. Consider the following examples:

- A product is shipped to a distributor who in turn ships the product to a Value Added Reseller (VAR). When the customer calls for service the manufacturer has no knowledge of the customer and the product requiring support. The process for updating the manufacturer with the sale of the product never took place.
- A self supporting customer with a service contract orders a hardware enhancement as an advance exchange swap. When the RMA is closed the product enhancement is never updated on the installed base knowledge. The enhancement should trigger an increase in the value of the service contract. But this never occurs because the installed base knowledge is never updated and the contract administrators are never notified.

Process issue #2: Lack of closed loop processes & data duplication

For many companies the challenges of data governance are compounded by the lack of closed loop processes to validate updates to the installed base knowledge resulting all too often in duplication of data, as well as, other problems that compromise accuracy. Typically, this is due to a breakdown in internal customer/supplier relationships. Consider the relationship between the field engineers and contracts administration. When a field engineer is recording a change to a customer's configuration he does not have access to the entire installed base. His view is limited to what is in front of him. If the reporting does not involve contracts administrators then the update will not be validated. Consider the following examples as fairly typical:

- Duplication of installed products -
  An older or faulty product is de-installed, refurbished, and shipped out to a new end-user, using the same serial number. If the de-install is not recorded and the installation of the re-furbished product is recorded by the field engineer then we now have duplicate records of the product. We now have two instances of the product with identical serial numbers. When this duplication is later encountered, a round of investigation needs to take place to define who the true owner is of the equipment with the duplicated serial number. There is now an additional cost for performing the investigation by the administrator, field engineers, and possibly local management. There is also the potential impact on the customer who may be contacted as part of the investigation.

- Duplication of customer or customer sites -
  Sometimes it is a matter of convenience to simply create a new entry for a customer or customer site than to search for the information in the database. This, however, results in multiple entries of the customer details in the database which are often similar (with just a difference of space, typo, capitals, numbers, word order, etc.). When confronted with what appears to be duplicate information the administrator does not know which customer record should be used, for example in the service contract. This can lead to either picking the wrong record or engaging in an investigation to identify the correct record.

These are but two of many scenarios where the lack of administrative closed loop processes can lead to more work later in correcting inaccuracies.

Impact on the Customer Service organization

Aside from the impact on the customer experience, the accuracy of the installed base knowledge will have a direct influence on customer service revenue and margins. This impact can be significant and grow over time as the accuracy of the installed base knowledge decreases but the installed base continues to grow.

New product sales: impact on service revenue and customer support

Simply stated you cannot sell service contracts to customers if you do not know who they are and what products they own. For many high-tech companies that sell their products through distributors and value added resellers (VARs), this can be a significant issue.   Consider the following example for a typical high-tech company:

- You sell 1,000 products a month through your channel of distributors and VARs. The registration rate, knowledge of which customer bought what products, is approximately 50%.
- The attach rate for service contracts for those sales is 80%.
- The average service contract has a value of $1,000.00 per year.

So while your potential service revenue per month is $1m the reality is that you can only realize $400,000 (80% of the 50% of products registered). Unless you improve your channel strategy as it relates to new sales and installed base knowledge, your potential revenue will remain at only 40% of its potential.

What is not always understood is that depending on how you manage your service delivery, our scenario above will also have a significant impact on margins. In order to maintain customer loyalty and customer satisfaction, many companies will lightly observe customer entitlements when handling support calls, in effect, giving away service when the customer does not have a support contract. The bottom line is that, to either a greater or lesser extent the customer service organization must provide support services to a far larger population of products than for what it has received contract revenue. The impact on service revenue margins will be substantially reduced.

Service contract renewals: diminishing revenue

Few companies have been able to obtain 100% renewal on their service contracts. And the renewal rate is typically reduced further by untracked changes in the installed base over the life of a service contract. Consider the following example:

- In the preceding year you have sold service contracts covering 40% of the products purchased by customers. So only 400 of the 1,000 products are entitled.
- Your contract renewal rate is only 70% of the products covered under a service contract.
- So your service contract penetration will decrease by 120 products leaving only 280 units under contract. But that is not the end of the revenue challenge because typically 10% of your products move to a different location during the course of the year.

So you will renew only 280 products, less 10% of your installed base because you don't know where those products are. Here the lack of accuracy of your installed base knowledge can contribute to a further loss in service revenue increasing the pressure on service margins.

Conclusions and Key Takeaways

The importance of installed base knowledge cannot be understated. While its role in the customer experience is important, its accuracy is critical in building and maintaining service revenue. To obtain this accuracy, an installed base knowledge strategy needs to be adopted that will address the entire life cycle of an installed product.

- A strategy for driving improvements to installed base knowledge accuracy must move beyond IT and MDM to include business goals and process improvements.
- It will help in defining the strategy to decide what installed base knowledge you want to capture and why.
- You need to insure that updates to the installed base knowledge are executed by trained personnel using closed loop processes that validate the updates

Case Study

Infosys BPO supports a large computer hardware and software manufacturer, helping to maintain the installed base knowledge in an Oracle environment. This support uses both Oracle and other tools for researching and correcting installed base accuracy issues.

The Infosys BPO team is integrated with the client's call centers, engineers, account managers and sales representatives to address installed base accuracy issues. In addition to these interactions, we also use automated reports to monitor installed based accuracy. The issues that we address range from the simple to the complex and include the following:

- Creation and/or correction of Item Instance
- Configuration set up and/or correction
- Updating customer information (name and/or address)
- Removal of outdated information
- Duplication errors
- Correcting service contracts when an installed product is listed under multiple contracts
- Correction of warranty duration
- Registration of products for warranty support
- Maintenance of technical point of contact visibility

These issues are not always solely related to the installed base but may also have a 'ripple effect' on service contracts and/or on other applications that are extracting the data from the installed base. Addressing these issues has thus required interactions with different groups within the client organization regarding not only the issues but other factors influencing the accuracy of the installed base knowledge and the related service contracts and entitlements knowledge.

In addition to the maintenance activities, the Infosys BPO team also analyzes the entitlement claims where there has been a dispute. Such disputes usually originate from invalid data in the installed base knowledge, such as missing updates from a physical change in the field, or when there have been non-authorized updates to the installed base. To address these issues the Infosys BPO team has engaged in the issue resolution process, contacting all involved customer representatives (managers and engineers) to identify the specific actions that need to take place to resolve and close the issue.

Furthermore, the Infosys BPO team has provides install base knowledge training classes to the client. In addition to scheduled and non-scheduled management reviews on a regular basis (weekly, monthly), the Infosys BPO team provides recommendations on improving the installed base knowledge.

About the Authors

John Thomann is a Principal Lead with Infosys BPO Ltd. With over 25 years of experience in service and support he has worked with a broad range of companies across industry segments to improve their service and support capabilities. Most recently he has increased his focus on warranty chain management challenges.

Marta Kotonova has over seven years of professional experience, out of which five are with Infosys BPO. Her skills include: experience in creating and maintaining business process documentation, ability to identify improvement opportunities, working knowledge of Oracle and Microsoft Office applications, excellent team-work and communication skills. Currently, Marta is working as an SME in S&F Center of Excellence in Europe

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