

## Packaged Software Application Services Industry: Evolution and the factors affecting the industry

Dr. K. Rangarajan<sup>1</sup>, Sushil K. Tiwari<sup>2</sup>

<sup>1</sup>(Prof. & Head, Indian Institute of Foreign Trade, India)

<sup>2</sup>(Research Scholar, Indian Institute of Foreign Trade, India)

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**Abstract :** The global Software & Services industry group is composed of the Information Technology and Communication markets. Information Technology consists of Services, Software, Digital Media and Hardware. Software consists of Software Development. And, in turn, the Package Applications Industry falls under Software Development. Package Applications Industry is divided into three segments –Applications Development & Deployment, Applications, and System Infrastructure Software.

Though the package software industry forms a big chunk of the software services industry, there has been very little academic work done that are specifically related to this field. This paper tries taking a look at the way this industry has evolved, current status, future prospects, and key players in the industry etc.

The paper also lists down the factors influencing the package software industry through the secondary literature reviews and interviews with industry experts in the area. In the end, the paper recommends the possible approach for further research in the area.

**Keywords:** information technology, package software, standardization, influencing factors, dynamic environment

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### I. Introduction

During the early years of commercial use of computers, all software systems were developed in-house from scratch using various development platforms<sup>1</sup>. Subsequently, software products were exclusively developed as unique systems for each organization and there was very little standardization.

The next phase of software evolution saw the growth of proprietary software widely called as 'Packaged software' with the objective to capture economies of scale in developing the software once and then selling it to multiple customers. This standardization process also benefitted software buyers by lowering transaction costs and risks, as it was possible to choose among a proven set of applications. As a win-win for both, standardization gave producers and buyers of software a way to capture and black-box best practices by embedding them into the standardized components of the systems.

Technically Packaged software is a category of information system for which all implementations are essentially identical and generally termed as 'template' or 'core business model.' Meaning, the main functionalities are common to all adopters. While the core components of a package are identical across all user organizations, the implementation into an individual organization is usually configured in a manner to fit the requirements of the local organization and is termed as 'Localization.'

Packaged software is also referred to as "commercial off-the-shelf" software. Open source systems or other types of nominally free software are other examples of packaged software. Some standard software packages require little or no configurations on the part of the user before they can perform, while other software packages provide basic features on top of which specific functionalities required by the user can be configured or customized.

Gartner studies<sup>2</sup> have implicated that between 50 and 80 percent of IT budgets are spent on system implementation and maintenance and not on acquisition of software and hardware. Therefore, software licenses usually only include fraction of the total costs of enterprise solutions. In addition, maintaining and running enterprise applications usually requires considerable amount of IT resources from underlying firms. All these facts contribute to the total costs of enterprise solutions for the acquiring companies, and are naturally the characteristics of traditional models of packaged software.

Packaged software services industry has been constantly expanding and forms a major part of the IT services industry. These services are provided by the product vendors themselves as well as by a number of system integrators (SIs) who can also be termed as Package Software Application Services Vendors (PSASVs). These PSASVs operate in a very complex stakeholder environment. On one hand, they have to depend on the product vendors for the product related developments and issues resolution. And, on the other hand, they have to influence the customer in selecting a product and then helping the customer to implement and manage the application. Extremely dynamic business environment adds to the complexity in strategy formulation for the PSASVs.

There is very little research literature available in the field of Package Software services. This paper is an attempt to give some fillip to further research in this area.

## II. Performance Of The Packaged Services Industry

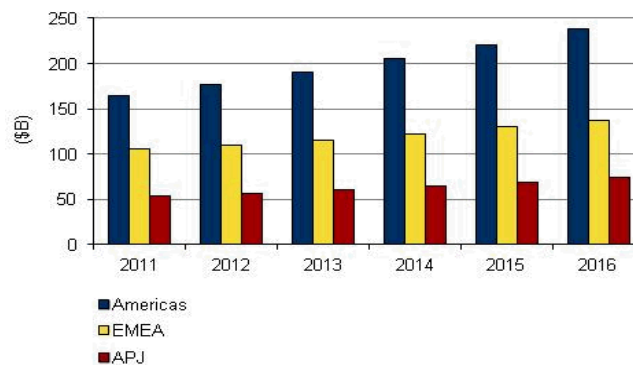
Package software industry is slated to register a CAGR of 6.3% for the period of 2010-15 with revenue of staggering USD 376.5 billion in 2012.

Table: 1 Package Service industry value<sup>3</sup>: \$ billion, 2010–15

Year	\$ billion	% Growth
2010	316.0	- - -
2011	331.5	4.91%
2012	352.7	6.39%
2013	376.5	6.74%
2014	402.3	6.85%
2015	430.9	7.11%
<b>CAGR: 2010–15</b>		<b>6.30%</b>

The Americas continue to be the leader in package software business followed by Europe-Middle East-Africa (EMEA) and Asia pacific-Japan (APJ) respectively (Fig: 1).

Fig: 1, Worldwide Packaged Software Revenue by Region <sup>3</sup>, 2011 – 2016



List below shows the ‘geographical coverage’ of the countries by the package software application services vendors. It may be the case that not all the vendors support all the countries but as a combination all the mentioned countries are covered.

North America (NAM): U.S., Canada.

Latin America (LATAM): Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Panama, Peru, Uruguay, Venezuela.

Asia/Pacific and Japan (APJ): Australia, Bangladesh, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam.

Europe, the Middle East and Africa (EMEA): Austria, Algeria, Azerbaijan, Bahrain, Belarus, Belgium, Bulgaria, Cameroon, Cote d'Ivoire, Croatia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Jordan, Kazakhstan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Luxembourg, Morocco, Netherlands, Nigeria, Norway, Oman, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Syria, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, Yemen.

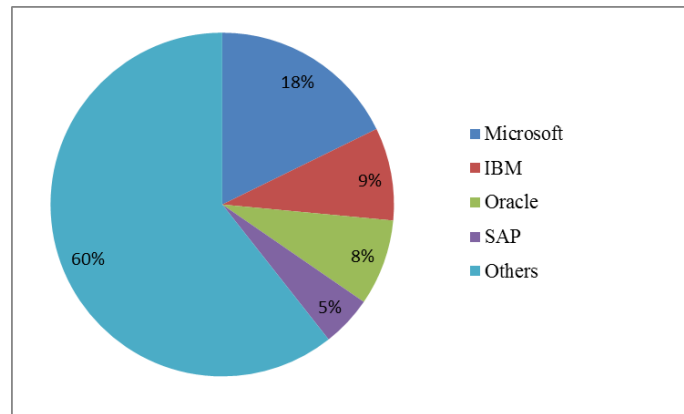
## III. Product Portfolio In Packaged Software Industry

Customizable Package applications have a very wide range of product portfolio spreading across the operational to Business Intelligence to Relationship application packages as indicated below.

- 1.1 **Operational Application Packages:** These packages provide the functionalities to manage the day to day operations of the organization. These are in the areas of Sales and Distribution, Materials management, Production planning, Finance, Human resource management etc. SAP, PeopleSoft, Oracle Applications, JD Edwards, QAD, Manugistics, i2 are the examples.

- 1.2 **BI Application Packages:** These packages mainly provide the data warehouse, analytics and reporting capabilities to the enterprises. The examples are Cognos, Microstrategy, Informatica, MS SQL Server Analysis Pack, SAP Business Intelligence, Hyperion Solutions Platforms etc.
- 1.3 **Relationship Application Packages:** These are mostly the customer facing applications for the enterprise. These are Kana Platform, Ariba, Microsoft CRM, Epiphany, CommerceOne, PeopleSoft CRM, Siebel Platforms, SAP CRM etc.

The figure below reflects the market share of various product vendors in the area of packaged software. It clearly shows that the market is highly fragmented. Top four vendors account for 40% of the market share.  
 Fig: 2, Market share for the Package Software Vendors



**IV. Key Players In Package Software Application Services**

Most of the large Software System Integrators (SIs) in the market provide the package application services. Gartner magic quadrant<sup>4</sup> though applies to SAP, but, is a good representative of the key players in the market as most of the players operate in multiple packaged products.

Gartner magic quadrant maps the services providers on two aspects - one, their completeness of vision, and, two, their ability to execute. Service providers falling in the Leaders quadrant are found to have completeness of vision as well as ability to execute. Accenture and IBM lead here followed by Indian players Infosys and TCS. Deloitte, though having completeness of vision to a great extent, but, having limited ability to execute, lands in the Visionaries quadrant. Challengers have the ability to execute but can do better on the vision side. HCL and Wipro among Indian players find the place here. Niche players are the service providers that are either operating at smaller levels by choice or have started building their package application practice later than their peers.

Fig: 3, Garter Magic Quadrants for packaged application services (SAP)



### V. Factors Affecting The Industry:

The strategy and operations of package software application services vendors are influenced by two sets of factors. The first sets of factors are internal to the organization. The other set of factors are dependent on external entities and are mostly out of control for the services vendor organization. Based on the secondary literature reviews and interviews with the industry experts, the broad areas that affect the package software services vendors' strategy formulations turn out to be environment, financials, people, processes, structure, governance and technology etc. Explicit influencing factors coming out of the literature are indicated below.

Table: 2 Factors influencing the Strategy formulation and working of the Packaged Software Application Services Vendors

No.	Factor	Area	Influencing factors
1	Internal	Environment	Financial considerations (Cost, Profitability etc.) <sup>5</sup>
2		People	Skill development <sup>6</sup>
3		Process	Pre-sales solutions <sup>7</sup>
4		Structure / Governance	Accessibility (Multi locations Operations) <sup>8</sup>
5			Geographical Locations <sup>8</sup>
6			Organization structure <sup>9</sup>
7		Technology	Customization and Development Process <sup>10</sup>
8			Innovation <sup>11</sup>
9			Product Related Factors (Quality, Variety etc.) <sup>12</sup>
10	External	Environment	Economic Conditions and Business Environment <sup>13</sup>
11			Government Regulations, Legislations and Policy <sup>13</sup>
12			Industry Dynamics <sup>14</sup>
13			Local Issues <sup>15</sup>
14			Mergers and Acquisitions <sup>16</sup>
15			Other markets and players <sup>17</sup>
16			Social and Demographic Factors <sup>17</sup>
17		Financials	Licensing Costs <sup>18</sup>
18		People	Cultural Issues and Knowledge Gap <sup>19</sup>
19		Process	Changes in the sales process <sup>20</sup>
20			Product Process <sup>21</sup>
21		Structure / Governance	Globalization related factors (World class IT, Knowledge of English etc.) <sup>22</sup>
22			Role of Industry organization i.e. NASSCOM <sup>23</sup>
23			Structure and Governance (Alliances, Partnership, Vendors etc.) <sup>24</sup>
24		Technology	Data Protection <sup>24</sup>
25	Technology <sup>25</sup>		

### VI. Suggestions For Further Research And Methodology

Identified factors in Section V influencing Package Software Application Services Vendors may form the independent variables set for further research. Objective of the further research can be to

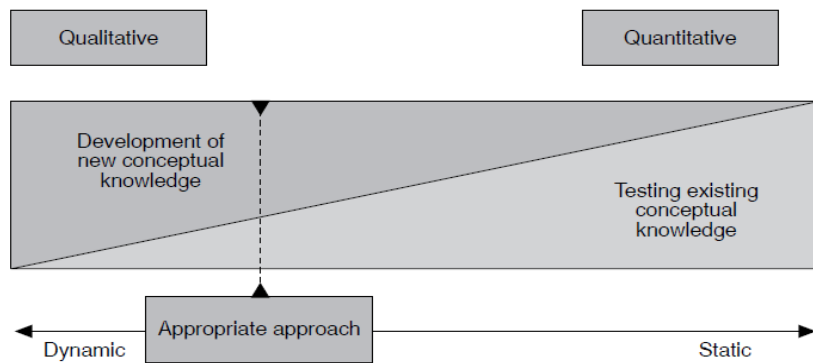
1. Study the inter-relationship of variables in the service creation and delivery.
2. Prepare the generic value chain of such firms and identify the weak areas in the current value chain of such PSASVs.
3. Understand the competitive forces in the industry and the trends in competitive dynamics leading to strategic responses.
4. Study the value chains of select firms to understand the value proposition, value creation and value delivery of services.

5. Develop a conceptual strategy framework for the PSASVs which help formulate and implement strategies for value enhancement.

Researching strategy formulation and implementation for dynamic environment like Packaged software application services requires the right balance between quantitative and qualitative methods.<sup>26</sup> A contingent research approach identifies such a balance. Statistical analysis can be leveraged to arrive at the relevant independent variables out of the variables coming out of the literature review. Output may be run iteratively through the case studies to arrive at the final set.

Using this approach, the degree to which quantitative and qualitative studies could be utilized would depend on the dynamics of change. In highly dynamic cases, research focusses on developing conceptual knowledge by heavily relying on qualitative studies, whereas in more static cases, quantitative studies would be favored for testing and validating existing conceptual knowledge.

Fig. 4, Contingent approach to research



The overall research process may comprise of two interlinked cycles:

1. Knowledge generation and Model creation: Knowledge is generated by formulating new ideas, models and hypotheses. This may be done either by using the quantitative analysis or Case study based approach.
2. Generalization cycles: Generated model may be then tested to determine their relevance for the organization.

## VII. Conclusion:

Significance of the Package Software Services is established by the share it has in the IT services industry. Even after being such an important entity in the IT services portfolio, there has been very little academic work done in this area, specially related to the factors affecting this industry and the challenges around them. Researches on the affecting variable would pave the way for identifying the strategic model for the package software service vendors. This, in turn would be a big area of academic research.

This paper has tried to highlight the key independent variable affecting the strategy of the packaged software services vendors. Intention is to open up the doors for further research on this important topic.

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