Software as a Service Offer Differentiation based on Suitability for Particular Business Units

by

Islam Balbaa

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Department of Systems and Computer Engineering

Carleton University

Ottawa, Ontario, Canada, K1S 5B6

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Abstract

An empirically derived quantitative study of 431 firms active in the Force.com SaaS (Software-as-a-Service) tools context is presented. Exploratory Factor Analysis techniques was performed for each business unit separately and for all business units combined. Those include sales, marketing, product management, support and maintenance, project management, HR (Human Resources), finance and IT (Information technology). Combining all business units and using Exploratory Factor Analysis extracted six types of market offering. (i) Marketing Automation, (ii) Project Management, (iii) Administration Support Operations, (iv) Finance Operations, (v) Permission Marketing, and (vi) Call Center Operations. Those were further clustered into: (i) Marketing Automation Software, (ii) Project Management Software; (iii) Support Services Software; and (iv) Finance Software. The results identified the firms that offer SaaS solutions for those types to position the product most suitable to department needs.
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INTRODUCTION

Software as a Service (SaaS) is growing, which will potentially replace on-premise software in many departments in various industries. These industries include automotive, aerospace, communication and broadcasting, computers, defense, electronics, finance, health care and retail. The departments include sales, marketing, support, project management, finance, HR and IT.

1.1 Research Question

Because of the widely available SaaS products, it could be difficult for users to find the most suitable tool that fit their requirements for their specific department and industry. The current literature available does not address the suitability of SaaS for particular business units’ requirements. This research analyzes the various supplier offerings in order to save time when attempting to find SaaS vendors. Thus the following question is asked:

What are the most appropriate SaaS features for the suppliers’ offer to businesses?

1.2 Relevance

The research is relevant to at least three groups:

- **Business System and IT managers:** Business system managers in the IT department are usually concerned with providing their organization with products and applications that are adaptable, offer high value, and cost-effective. Steven
Tuecke, CEO of Univa Corporation and co-founder of Globus Alliance responsible for managing the architecture, design, and development of Globus Software stated that “an organization that adapts to market conditions so that it can respond to and address changes in their market to better position itself (Tuecke, 2005).”

- **Departmental Executives:** Head executives in departments such as sales, marketing and support are concerned with leveraging the best products that will be efficient and productive for their employees. They are also concerned with setting up a budget for buying these products. According to Rick Crossland, director-CRM for Ford motors “With business systems set in place such as call tracking technology and more sophisticated lead-management systems, departments are better able to determine who and what the sources for their leads are. This increases work efficiency (Banks, 2004).” Also, Devon Johnson, an assistant professor of marketing at Northeastern University, in Boston and Sundar Bharadwaj, an associate professor of marketing in the Goizueta Business School at Emory University added that “digitization has the paradoxical effect of improving salesperson effectiveness by improving sales force control systems (Johnson & Bharadwaj, 2005).”

- **Software Vendors:** This thesis can help the SaaS vendors to do more research, development and product integration with what the market needs, thus increasing the market growth and also improving product management, sales and marketing strategies. Justin Mathena and Aaron Yetter, founders of Altriva Solutions based in Bellevue Washington, and Hoss Hostetler Director of CRM, at Altriva
Solutions, mentions that “Implementing the correct CRM system can be a significant effort with broad expectations of long term business value (Mathena, Yetter & Hostetler, 2009).” Steven Tuecke, CEO of Univa Corporation and co-founder of Globus Alliance, added that “IBM talks about an on-demand business as an enterprise whose business processes is integrated end-to-end across the company (Tuecke, 2005).”

1.3 Deliverables

The thesis has produced the following deliverable:

- Analysis of factors that differentiate the SaaS vendors offers – clustering of companies based on these factors

1.4 Contribution

The thesis provides the following contribution:

- Save SaaS consumers time when researching the offers from SaaS suppliers

1.5 Document Organization

The rest of the thesis is divided into six chapters as follows:
- **Chapter 2**: A literature review organized into the following streams: SaaS background, issues and future of SaaS, research theories and statistical analysis and lessons learned
- **Chapter 3**: Describes the research methodology including research strategy, research design, research methods, selection criteria, keyword selection and data acquisition
- **Chapter 4**: Contains the research results including data analysis and validation
- **Chapter 5**: Covers the discussions of results which include factor and cluster analysis
- **Chapter 6**: Concludes the thesis with research limitations and challenges
LITERATURE REVIEW

This chapter is organized into four streams. The first stream reviews the literature on the SaaS background. The second stream provides a detailed explanation on the SaaS characteristics, architecture and implementation. The third stream contains the various SaaS benefits and issues. The fourth stream provides the research methodologies used in this thesis which includes factor analysis. Finally, the lessons learned from the literature review will be discussed.

2.1 SaaS Background

Software as a Service (more commonly referred to as SaaS) is software that is deployed to run behind a firewall on a local area network LAN and/or is deployed over the internet (Biddick, 2010). SaaS is cloud-based meaning that the delivery of complete software applications runs on infrastructure that the SaaS vendor manages. There are 5 stacked layers of cloud computing and SaaS comprises one of those layers, the application layer. The first layer is infrastructure which offers services that operates like dedicated servers with memory. Once a computer process is started, the developer has complete control over its operations and must add necessary processes to it and then terminate it when complete (Iyer & Henderson, 2010). Examples of the infrastructure layer include Amazon and IBM. The second layer is Platform as a Service which allows developers to build applications without worrying about computer processes. Typically, vendors provide a development environment with a programming language that can be used to
create new applications (Iyer & Henderson, 2010). Examples of the Platform as a Service layer include HP and Google. The third layer is the application layer which is where SaaS lies; users can access online services through SalesForce.com (Iyer & Henderson, 2010). Examples of SaaS include customer relationship management CRM, enterprise resource planning ERP and financial systems. The fourth layer is collaborative which consists of social networking applications that assists in collaborative work and building communities (Iyer & Henderson, 2010). Examples of the collaborative layer include Facebook and LinkedIn. The Fifth layer is service which provide consulting and integration services. Examples of the service layer include Appirio and Boomi.

SaaS can be defined as a software distribution model in which applications are hosted by a vendor and made available to customers over the internet. Those SaaS vendors manage the daily operations and provide maintenance and support to their customers (Roehl-Anderson, 2010). Some vendors may host it on servers they control, or they may allow the application to be downloaded onto the device of the consumer. The functionality for the on-demand features may be handled in an internal manner, but they may also be handled by a third-party who is referred to as being the ASP, or application service provider. The ASP will generally be responsible for the sharing of licenses among multiple firms. SaaS allows for licensing on-demand while handling both the information and output simultaneously, which means the location of the hardware is not important. SaaS is distinct from older Internet-based applications because they were created to leverage online technologies like the browser, making programs better for the web.

Dubay & Wagle (2007) explore several factors which prove that SaaS is growing. New software design and delivery models allow many more instances of an application to run
at once in a common environment, so providers can now share one application cost effectively across hundreds of companies. Also, bandwidth costs are dropping, which makes it affordable for companies to acquire the level of connectivity that allows online applications to perform well. More importantly customers are frustrated by the traditional cycle of buying software licenses and going through time-consuming and expensive upgrades. Many customers believe they would have more control over the relationship if they paid monthly fees which could be switched to another vendor if the first failed to perform gracefully. Finally, the success of early leaders such as SalesForce has demonstrated the value of the SaaS model.

Dubay & Wagle (2007) research identified that the first wave of SaaS adoption has been underway for several years, including the technology for HR applications such as CRM and payroll. Also, SaaS technology is now used in many industries such as retail, services, health care, computers, automotive and finance. The next wave of applications seems likely to involve transactions between buyers and suppliers including logistics and supply chain management. The third wave of applications is more critical to business such as hosted environments for software development. All three waves are to replicate the functionality of applications that have been sold as packaged software and hosted on the customer’s site.

2.2 SaaS Features

This stream is divided into three sub streams: SaaS key characteristics, SaaS architecture and SaaS implementation
2.2.1 SaaS Key Characteristics

Jaatun (2009) identifies the following as the key characteristics of SaaS:

- **Supporting Multitenant Architecture**: Where all users and applications share a single, common infrastructure and codebase that is maintained centrally. Because SaaS is deployed on the providers' side and available to the public, vendors can innovate more quickly and save the valuable development time previously spent on maintaining numerous versions of outdated code.

- **Thin Client Mode**: SaaS client vendors use internet browser to access results. While as all the computations and consumer-specific datasets are stored and maintained on the providers' side. Thus the client need not worry about that.

- **Better Access**: Data is accessed more readily from any networked device, making sure everyone sees the same information at the same time.

- **Supporting commonality**: The web interface of typical SaaS applications has similar functionality and features to consumer websites such as E-bay and Facebook, thus making it easier for users to navigate through.

One of the key characteristics of SaaS that is different from in-house products is pricing. SIIA (2001) mentions that the licensing models are as follows:

- **Subscription-based model**: Subscription is usually on a per-seat or named user basis. Monthly payment is calculated on the software actually used and includes a commitment as to the actual number of users.
- **Usage-based model:** Payment is determined by the number of CPU's that runs the hosted application or by application usage and is typically related to peak levels of usage.

- **Transaction-based model:** Customers are charged for each business transaction. Example purchasing one relational database class is one service, two classes is two services and so on.

- **Value-based model:** Payments are linked to the achievements of business goals through the software.

- **The fixed-fee model:** A predetermined monthly fee is paid based on the number of users supported, which application modules are rented, and maintenance and support levels identified by the customer.

Chong & Carraro (2006) study identifies two major categories for SaaS in terms of consumers:

- **Line-of-business services:** offered to enterprises and organizations of all sizes. Line-of-business services are often large, customizable business solutions. These services are typically sold to customers on a subscription-basis.

- **Consumer-oriented services:** offered to the general public. Consumer-oriented services are sometimes sold on a subscription-basis, but are often provided to consumers at no cost, and are supported by advertising.

### 2.2.2 SaaS Architecture and Attributes
Chong & Carraro (2006) suggest that in order to design an SaaS application, three important features need to be part of the design. The SaaS application should be scalable, multi-tenant-efficient and configurable.

- **Scalable**: This means using the application resources more efficiently and getting the highest value out of concurrency. Examples include caching reference data, sharing pooled resources such as network connections and threads, and partitioning large databases.

- **Multi-Tenant-Efficient**: This is one of the most significant SaaS architectural standpoints. For example, when a user at one company access the SaaS CRM application, service and data, this application instance can also be accessed by hundreds of other companies and users at the same time without the users knowing of it. This requires an architecture that maximizes the sharing of resources across users (tenants) while differentiating data belonging to different customers.

- **Configurable**: Each customer uses metadata to configure the SaaS application functions. This is done because you can’t simply write custom code to customize the end-user experience; this will change the application for other customers as well. The SaaS architect must ensure that the tasks of configuring the application is simple and easy to use for the customers, without adding extra development or operation costs for each application.

2.2.3 SaaS Implementation
The next issue that must be carefully considered is SaaS implementation. Chong & Carraro (2006) explain that the SaaS application maturity and good architecture can be expressed by using a model with four distinct levels. Each level is different from the previous one by the addition of one of the three attributes listed in section 2.2.2. Maturity of SaaS applications isn’t an all-or-nothing proposition. An application can have one or two or three of these attributes and still meet the business requirements needed. Here are the four different models:

- **Level I Ad Hoc/Custom**: For this level each customer has their own customized version of the hosted application and run their own application instance on the host’s servers. Different customers within an organization connect to a single instance running on the server, which is fully independent of any other instances that the host is running on behalf of its other customers. This is the best level solution for low-cost applications. Since it has relatively little development effort and doesn’t require re-architecting the system from the ground-up.

- **Level II Configurable**: For the first level each instance is individually customized for the user. However, in this level, the vendors host a separate instance of the application for each customer. All instances use the code implementation, and the vendor meets customers’ needs by providing detailed configuration options that allow the customer to change how the application looks and functions according to their users’ needs. Each instance is fully isolated from all others. The second level works well for reducing a SaaS application’s service requirements, because any changes made to the code base can be easily provided
to all of the vendor’s customers at once. This then removes the need for upgrading instances. However, Level II requires more re-architecting than Level I.

- **Level III Configurable and Multi-Tenant-Efficient:** The vendor runs a single instance that serves every customer with configurable metadata providing a unique user experience and feature set for each user. Security privileges and authorization ensures that each customer’s data is kept separate from the other customers. From the end user’s perspective, there is no way of knowing whether the application is being shared by other users. This eliminates the need for the vendor to provide server space for as many instances of customers; thus allowing more efficient use of network resources which translates into lower costs. The most significant disadvantage of this approach is the scalability of the application is limited.

- **Level IV Scalable, Configurable, and Multi-Tenant-Efficient:** For level four the vendor hosts multiple customers on load-balanced farm identical instances, with each customer’s data kept separate and with configurable metadata. This is scalable to a large number of customers, because the number of servers and instances on the back-end can be increased and decreased on-demand, without the need of additional re-architecting. This provides a unique user experience for each customer.

Kressel & Lento (2007) give an example of a successful SaaS implementation at Accredited Home Lenders Inc., which is in the mortgage lending business. Accredited Home Lenders has reduced the process involved in completing a mortgage application to a set of interconnected software components. This in turn changes the
procedures to a simple, integrated, self-service procedure. The procedure ensures saving lots of time. Brokers go online to get pricing, receive approvals and submit applications.

Rittinghouse & Ransome (2009) state a few challenges for SaaS implementation. An organization can have very specific computational and functional needs and thus it will be challenging for them to find a SaaS application suitable for them. There is also the Lock-in challenge, where the customer pays a vendor to use an application but once they do, they might be unable to port that application to a new vendor. Even if it is possible to move to a new vendor, the old vendor might ask for a high fee. Finally, the availability of open source applications is challenging.

2.3 SaaS Benefits and Issues

The following stream is divided into three sub streams; SaaS value proposition, SaaS benefits, and issues.

2.3.1 SaaS Benefits

Blokdijk (2008) states the various benefits of SaaS applications:

- The customers are able to provide feedback for software with bugs and issues. The software company is then responsible to fix these bugs.
• SaaS is customer-focused and customer-friendly. This means that SaaS vendors install and setup their applications that are made available for the customer.

• SaaS applications need a low cost of investment and that is due to its pricing model being subscription-based. It is also simple to terminate the subscription without recurring a big sum of money.

• Easy updates of software. Customers are guaranteed the best version of the product and bugs are always resolved in a timely manner.

SaaS is beneficial not only to the customer but also the independent software vendor themselves. Here are the benefits for both:

**Independent Software Vendors:**

1. Improved customer support and service level agreements.

2. Predictable revenue stream and growth. The revenue stream to the software providers is on-going since the pricing model is subscription-based thus the customers will always pay on a schedule. Therefore, the provider can get a real handle on forecasting revenues. Also, the growth is predictable since there could be a way to monitor the users’ usage percentages thus finding out if there is room for growth. This in turn means that the on-going costs are more predictable and expected (Sultan, 2007).

3. Easier to fix bugs and enhance features since the focus is more on smaller, incremental upgrades instead of patch rollouts (Sultan, 2007).
4. Quicker and easier to market since sales becomes customer relationship management CRM. This means that the provider should keep their ratings high and this will help bringing in new customers (Blokdijk, 2008).

Customers:

1. More stable and secure system. The customer will get to a secure application without the need to do complex back-end configurations. Also, the providers make sure that SaaS is an uninterrupted, reliable service against security breaches. Also, the providers make sure that the data is always backed-up. This is done through an infrastructure that includes network redundancies, stand-by power, and up-to-date security and intrusion detection (Blokdijk, 2008; Velte & Elsenpeter, 2009).

2. Quick implementation since SaaS provides a fast track for getting the application up and running. Easier and shorter deployment which could take minutes instead of traditional software that takes months to deploy. Therefore implementation risks are reduced (Blokdijk, 2008; Sultan, 2007; Violino, 2009).

3. The provider manages all upgrades; thus the customer does not need to install or upgrade patches or client/server software installation or maintenance. Also, the providers constantly improve the application experience by providing smaller upgrades instead of large ones that cost time and money to implement (Sultan, 2007).

4. The SaaS provider manages the IT infrastructure thus lower initial costs for hardware and software. This means no issues with upgrading aging technologies
and protection from unforeseen expense spikes when using traditional software. (Blokdijk, 2008).

5. Using a SaaS vendor reduces the need for as much IT staff. This leaves the IT staff to focus on strategic initiatives and day-to-day technical operations instead of performing development, enhancement or deploying aging infrastructure and applications (Sultan, 2007).

6. SaaS provides a high return on investment (ROI) for the customer, since a SaaS subscription already includes maintenance and support and does not need additional software or hardware, making it more affordable. Also, by outsourcing software functionality to a SaaS vendor, the customer realizes a cost savings in infrastructure and IT personnel knowledge requirements. Additionally, because customers pay on a subscription basis instead of paying upfront costs, the monetary risk is lower (Blokdijk, 2008; Sultan, 2007; Violino, 2009).

7. The learning curve for using SaaS applications is low since most employees now are familiar with the World Wide Web. Also SaaS applications are now available from any computer or any device anytime, anywhere. This tends to make SaaS applications have high adoption rates (Blokdijk, 2008).

8. SaaS applications are very easily customizable to meet specific organizational needs, without the need of coding skills. Also, many SaaS vendors provide application programming interface APIs that can integrate seamlessly with various business systems applications or ERP’s (Blokdijk, 2008).

9. SaaS applications are globally available. Thus it is easy to find the most suitable SaaS application for the customer’s organization, since the application’s various
functions are available from anywhere on the internet (Blokdijk, 2008; Sultan, 2007).

10. Because of the increase of bandwidth recently, customers now trust that they can access their applications with good speeds and low delays (Blokdijk, 2008).

11. SaaS applications provide great benefits for managers in an organization they are:

   • Greater insights: managers will have more visibility on work priorities.
   • Increased accuracy: managers will know where resources are allocated at all times.
   • More transparency: managers have increased control over the execution of projects.
   • Time savings: the elimination of spreadsheet management means managers will have more time to focus on other tasks.
   • Increased collaboration: various departments can now be brought into the process of prioritizing projects (Violino, 2009).

12. SaaS applications provide an increased agility which means that companies can adapt to changing marketing conditions while optimizing limited resources. Companies would now have a bigger picture view of the work that needs to be done (Violino, 2009).

13. Unsatisfied customers can report their frustrations and the SaaS provider is motivated to fix the problem since it is easy to switch to other vendors. SaaS customers can cancel their subscriptions and transfer to a different application vendor without incurring penalties. Also, there are SaaS vendors that have the
option to pay only for what you use, meaning paying only for the active users and not the whole organization (Finch, 2005).

### 2.3.3 SaaS Issues

Although there are many benefits of using SaaS there are still several issues facing SaaS today. Those issues include security. Here are a few quotes from executives as to why security is an issue for using SaaS applications:

"We just don’t feel comfortable with that; it’s more secure for us to keep it in-house. Our data is so sensitive with regard to the Family Educational Rights and Family Act (FERPA) and HIPPA, that we’re constrained." - William Souder, chief information officer at Berry College (Rogers, 2008).

"We’re keeping all our stuff in-house. Security is one thing but cost is a big factor also." - IT manager from a Florida-based health care provider, who asked not to be named (Rogers, 2008).

"From the supply side, there’s a hell of a lot of evangelizing to do around this. Make sure that the provider understands your security concerns. What type of encryption are they using? What type of security do they have for their own data centers?" - Doug Chandler IDC analyst (Rogers, 2008).

Newman & Thomas (2008) study identifies two major concerns with SaaS security where the customer doesn’t have control over the whole process and they are:
- **Unauthorized access**: Since the data is stored on the remote server where your SaaS application is deployed, there is more risk of unauthorized access. These risks include captured passwords, data viewed by people who shouldn't view it, and modifications to your data. Unfortunately, these crimes are stealth and very often companies don't even know about them.

- **Physical peril**: This happens when data is physically destroyed from floods, fires, earthquakes, and other natural disasters. Although most servers have backups, there's a chance data can be unrecoverable. Again by accessing information remotely, it's putting the data in the trust of the software vendor.

Newman & Thomas (2008) also mention that there are also SaaS issues other than security and they include:

- **Privacy and confidentiality**: SaaS vendors require a significant trust from the customer. This is an issue for large companies that hold sensitive and confidential information. The organization wouldn't want to share that information with a software provider. Examples include hospitals and banks which have privacy concerns.

- **Internet issues**: Users must depend on their internet connection in order to get access. This can be a major issue in the event of a network or internet failure. Moreover, there are several downtimes and maintenance windows when using SaaS applications which the customers can't avoid.
2.4 Research Analysis

The following references have helped determine the most suitable way to gather data and
the research methodology to follow.

Hicks et al. (2006) gathered data on the commercialization strategies of innovative small
high tech firms by using web mining techniques. Instead of using questionnaires and
interviews he used various company websites to extract their data. The word’s frequency
on the website was extracted and the pattern of occurrence assessed to perform
classification.

Lombardi (2006) used this same technique to classify the interaction between Eclipse
foundation members and Eclipse projects. He used a tool called keyword search tool to
calculate the frequencies of the keywords and performed a factor analysis to extract the
classes of interaction between Eclipse members.

Allen (2009) used the same technique and tools to study the first empirical identification
of components of value co-creation. He used a tool called the keyword search tool and
then performed component analysis on the results.

Jdue (2009) also used the same technique and tools to choose the most appropriate
network control systems in the first level industrial automations. He performed factor
analysis on the results.
Soheili (2010) also used the same technique and tools to classify the different types of market offers from open source security tools (OSST). He performed component and factor analysis on the results.

Data mining from the internet is a good research method. Gathering any data on SaaS applications is difficult and time consuming through questionnaires and interviews; however, data is readily available through the web. The rule of thumb here for gathering a sample size is to have more data (Costello & Osborn, 2005; Darlington, 2007). I will use the same techniques and keyword search tool to gather my data.

2.4.1 Principal Component Analysis (PCA)

Principal Component Analysis (PCA) involves a mathematical procedure that transforms a number of possibly correlated variables into a smaller number of uncorrelated variables called principal components (Jolliffe, 2002). According to Costello & Osborn (2005) PCA is not the best method since PCA is considered to be a data reduction method that became popular when computing technologies were expensive. Costello & Osborn (2005) recommended factor analysis since it results in the same solution as PCA and avoids the increase of variance by making use of more complex algorithms for today’s computer.
2.4.2 Factor Analysis

Costello & Osborn (2005) mention there are more than six factor extraction methods that can be used in factor analysis. They are PCA, generalized squares, maximum likelihood, unweighted least squares, principal axis factoring, alpha and image factoring. They pointed out that maximum likelihood is the best choice to use for data that is normally distributed and if not, then the principal axis factor or common factor analysis can be used.

2.4.3 Exploratory Factor Analysis (EFA)

Costello & Osborn (2005) and Darlington (2007) state that Exploratory Factor Analysis (EFA) is a combination of both component analysis and common factor analysis (principal axis factor). This is the most effective way to discover simple patterns in the patterns of relationship among variables (Darlington, 2007). To prove a successful factor analysis, Allen (2009) and Darlington (2007) address the following four questions:

1. How many different factors are needed to explain the pattern of relationships among these variables?

2. What is the nature of those factors?

3. How well do the hypothesized factors explain the observed data?
4. How much purely random or unique variance does each observed variable include?

2.4.4 Factor Extraction

Selecting the number of factors is an essential step in factor analysis and it is very important to determine the outcome of the results. Exploratory factor analysis (EFA) which includes common factor analysis (CFA) and component analysis seek the least number of factors that can be used for common variance or correlation. This method will be used since the more number of factors, the more complex the results will be. There are two ways to extract the most suitable number of factors. The first method is to choose the variables that have an Eigenvalue above 1. Second, Costello & Osborn (2005) recommended the Scree test in which from the Scree plot graph retain the number of factors that occur above the plot break.

2.4.5 Rotation Methods

In order to make the factors outputs more understandable, rotation needs to be implemented. Rotation causes the factors to find a solution that is equal to that obtained in the initial extraction, but has the simplest interpretation. There are two major rotation categories: oblique rotations, which produce correlated factors, and orthogonal rotations which produce uncorrelated factors. Varimax is the mainly used method of rotation and is
believed to be the best orthogonal rotation method (DeCoster, 1998). In the next chapter, the process that was used for this research will be explained.

### 2.5 Lessons Learned

Here are the various insights gained from reviewing the literature:

- SaaS revenue streams to the vendor are lower initially than traditional software license fees, but are also recurring. That’s because SaaS generally price applications on a per-user basis then add on fees for extra storage and bandwidth.

- Bandwidth of wide-area networks has grown drastically following Moore’s Law. This has driven companies to access remote locations and applications with low latencies and acceptable speeds, increasing the demand for SaaS applications.

- Data mining techniques are a good choice for SaaS research, since most SaaS business applications have a website or enough information on the Internet (esp. Force.com).

- Pettey & Stevens (2009) gathered survey results showing that 58 % of organizations will maintain current levels of SaaS in the next two years, 32 % will expand, 5 % will discontinue and 5 % will decrease levels. Although a high percentage will continue or expand SaaS there is still a small percentage that will discontinue and decrease. Thus there is still a lot of room for leveraging, educating on and improving SaaS products and marketing.
RESEARCH METHOD

This chapter provides the detailed steps and methods that have been undertaken to complete this research. It is organized into six sections. Section 3.1 covers the research strategy and methodology. Section 3.2 identifies the research design. Section 3.3 discusses the research steps in details. Section 3.4 identifies the selection criteria.

3.1 Research Strategy

The research method used in this research is based on inductive theory followed by grounded theory resulting from the descriptive building theory by Christensen & Carlile (2005). Inductive theory is used at first when gathering adequate known data such as the different business unit names and their corresponding business functions based on earlier observations. This will be discussed in detail in the selection criteria section. This is then followed by performing different statistical analysis including exploratory factor analysis (EFA). Given those set of variables what are the underlying factors that will account for the patterns or the co-linearity among variables, thus springing out unknown outcomes. Therefore, through grounded theory, the various results would be determined according to the unknown outcomes.
3.2 Research Design

The unit of analysis for this research will be firms that offer SaaS business applications and services, and can range from small to large firms.

The time period for the data gathered is within the past 5 years. Since, SaaS offerings is very recent.

Sample data will be drawn from SaaS company websites following the data mining technique. This approach builds on the earlier keyword based web data mining techniques of Hicks et al. (2008), Lombardi (2008), Allen (2009), Jdue (2009) and Soheili (2010).

3.3 Research Steps

The following are the steps taken to accomplish this research. Each is explained in more detail in other sections:

1. **Literature Review:** Study the SaaS background and the different data mining techniques, research theories and statistical analysis including exploratory factor analysis (EFA).

2. **Lessons Learned:** Develop various lessons learned from this literature review.

3. **Keyword Selection:** Keywords selected are the business functions (functional or non-functional) for each of the different business units that form a firm.
Specifying those business functions was taken from various literatures as will be discussed in the keyword selection section in detail.

4. **Selection Criteria:** The websites selected are the ones that offer a business solution to the various business units selected.

5. **Data Acquisition:** Relate the business functions and non-functional criteria gathered by the SaaS vendors. Remove duplicate SaaS websites and business functions across the different business units.

6. **Data Analysis:** Perform keywords-based analysis using the keyword search tool to build a framework spreadsheet with all functional and non-functional criteria as columns and SaaS URL’s as rows.

7. **Data Validation:** Adjust the keywords data until the requirements for factor analysis are meet those include a sampling adequacy test KMO greater than 0.5 and a significance test Bartlett of less than 0.05.

8. **Factor Analysis:** Perform factor analysis on the data using the R statistical tool. Steps include Scree test (Scree plot and Eigenvalues) and rotational analysis (Varimax).

9. **Cluster Analysis:** Perform cluster analysis (K-means cluster analysis) on the factor outcomes. Include factors of a load greater than 0.4.

10. **Discussions:** Explain the results, discuss the outcomes and provide managerial insights.

11. **Conclusion:** Draw a conclusion and identify limitations, challenges and future research opportunities.
3.4 Selection Criteria

Keywords are collected through an extensive search on various websites and literatures. Since the keyword search tool (Google Ajax Search API) would support the “AND” and “OR” logical operation, combinations of keywords can be used as one keyword.
RESEARCH RESULTS AND DISCUSSIONS

Due to the large amount of results gathered. The results analysis will be done for each business unit separately and then a combination of all business units together will be analyzed.

The R tool was used for all statistical analysis including PCA, Factor and Cluster analysis. The R tool is an open source platform for statistical computing. One of R's strengths is the ease of generating plots including mathematical symbols and formulae where needed. To obtain the results I have used both the R tool and the R commander. The R commander is an R tool package; it is a GUI that consists of a window containing several menus, buttons, and information fields. In addition, the Commander window contains script and output text windows. The R commander menus are easily configurable through a text file. It is an easy to use interface that doesn’t need any R code lines to run.

This chapter streams will be organized according to the business unit name as follows. Section 4.1 discusses the steps in selecting the list of keywords and what they are. Section 4.2 covers the data acquisition. Section 4.3 covers the Sales data analysis, factor analysis, cluster analysis, discussions and managerial insights. This is also done for section 4.4 marketing; 4.5 product management; 4.6 support and maintenance; 4.7 project management; 4.8 IT; 4.9 finance; 4.10 HR and finally section 4.11 covers all the business units combined.
4.1 Keyword Selection

The business unit names that form a firm are as follows:

- Sales
- Marketing
- Product Management
- Support and Maintenance
- Project Management
- IT
- Finance
- Human resources

Criteria can be divided into two categories functional and non-functional

**Non-functional Criteria:**

Non-functional criteria are concerned with what the SaaS vendors’ benefits are to the customer as an add-on to the business function. Those are criteria a customer looks for after determining the most suitable SaaS application or service that meets their functional needs. Those include the price of the SaaS product and whether it’s free of discounted, if support is provided and whether the SaaS product integrates with the current customer CRM system. The customer would also observe the SaaS product ratings and reviews according to the number of reviewers. Here is the summary of the non-functional criteria
keywords taken from the SaaS vendors’ websites added to the data results without going through the keyword search tool.

- Free
- Supported
- Integrated
- Score (ranking)
- Popularity (number of reviewers)
- Discounted

**Functional Criteria:**

For each business unit, those are the major functions the department would use and need business software tools for. This, in turn, will help determine the suitability of different SaaS software with particular business units. The following are the functional criteria according to the business units shown in table 1 (Appendix 1 shows the entire set of keywords from those business functions and its corresponding URL’s for each business unit name):

<table>
<thead>
<tr>
<th>Factors</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>Sales ownership tracking</td>
</tr>
<tr>
<td></td>
<td>Quote tracking</td>
</tr>
<tr>
<td>Sales process information</td>
<td>Analyzing sales tasks</td>
</tr>
<tr>
<td>Marketing</td>
<td>Lead Scoring</td>
</tr>
<tr>
<td><strong>Product Management</strong></td>
<td><strong>Support and Maintenance</strong></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Managing campaigns</td>
<td>Social media marketing</td>
</tr>
<tr>
<td>Search engine marketing</td>
<td>Marketing</td>
</tr>
<tr>
<td>Product marketing</td>
<td>Sponsorship</td>
</tr>
<tr>
<td>Defining new products</td>
<td>Product lifecycle planning</td>
</tr>
<tr>
<td>Gathering requirements</td>
<td>Product lifecycle planning</td>
</tr>
<tr>
<td>Outsourcing technical support</td>
<td>Contract management and planning</td>
</tr>
<tr>
<td>Community/ Web 2.0</td>
<td>Customer service</td>
</tr>
<tr>
<td>Project initiation</td>
<td>Project execution</td>
</tr>
<tr>
<td>Project planning</td>
<td>Project design</td>
</tr>
<tr>
<td>Project termination</td>
<td>Financial analysis</td>
</tr>
<tr>
<td>Task and cost deliverables</td>
<td>Contract administration</td>
</tr>
<tr>
<td>Reporting</td>
<td>Document sharing</td>
</tr>
<tr>
<td>Data migration</td>
<td>Data validation</td>
</tr>
<tr>
<td>Data validation</td>
<td>Data tabulation</td>
</tr>
<tr>
<td>Virus tracker</td>
<td>E-mail content</td>
</tr>
<tr>
<td>Budgeting preparation</td>
<td>Regulating pay</td>
</tr>
<tr>
<td>and administration</td>
<td>the pay, leave</td>
</tr>
<tr>
<td>Property inventory</td>
<td>and pension of employees</td>
</tr>
<tr>
<td>Investment and public</td>
<td>Credit levels</td>
</tr>
<tr>
<td>Debt</td>
<td>Shares/ bonds</td>
</tr>
<tr>
<td>Financial reports</td>
<td>Tax reports</td>
</tr>
<tr>
<td>Statutory reports</td>
<td>Compensation and bonuses</td>
</tr>
<tr>
<td>Tax reports</td>
<td></td>
</tr>
<tr>
<td>Compensations and bonus</td>
<td></td>
</tr>
</tbody>
</table>
### Human Resources

<table>
<thead>
<tr>
<th>Human Resources</th>
<th>Recruitment and selection</th>
<th>Training and development</th>
<th>Performance evaluation and management</th>
<th>Promotion and transfers</th>
<th>Record keeping of all personnel data</th>
<th>Career development</th>
<th>Competency mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance appraisal</td>
<td>Employee benefits</td>
<td>Personnel cost planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: Functional criteria keywords**

#### 4.2 Data Acquisition

Data mining techniques have been used to extract data from websites which offer a business function per business unit name. Table 2 shows the numbers of all functional keywords and URL’s that provide business services, for each business unit:

<table>
<thead>
<tr>
<th>Business Unit Name</th>
<th>Number of functional keywords</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>11</td>
<td>118</td>
</tr>
<tr>
<td>Marketing</td>
<td>21</td>
<td>107</td>
</tr>
<tr>
<td>Product Management</td>
<td>7</td>
<td>44</td>
</tr>
<tr>
<td>Support and Maintenance</td>
<td>13</td>
<td>57</td>
</tr>
<tr>
<td>Project Management</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>IT</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>Finance</td>
<td>21</td>
<td>55</td>
</tr>
<tr>
<td>HR</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>431</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>14</strong></td>
<td><strong>54</strong></td>
</tr>
</tbody>
</table>

**Table 2: numbers of all functional keywords and URL’s for each business unit**

All data was taken from the AppExchange section of Force.com which is the SalesForce Platform-as-a-Service model.

The reasons data was collected from Force.com are as follows:
1. SalesForce is the number one used CRM tool.

2. Force.com has the highest number of applications that would integrate with a single CRM tool; the number is in the 1000’s.

3. Each application belongs to a certain function whether its sales or support or project management which makes it easier to categorize them according to the specified departments.

4. Each application has the price, ratings and reviews provided.

SalesForce is a SaaS company that distributes business software based on subscription. It is mostly known for its CRM products. Force.com allows external developers to create add-on applications that integrate into the main SalesForce application and are hosted on SalesForce.com's infrastructure. The directory of applications built for SalesForce by third-party developers, which users can purchase and add to their SalesForce environment is known as the AppExchange.

From the Force.com AppExchange, data was gathered from the function list. Each function corresponds to a business unit name as highlighted in figure 1:
AppExchange has 946 Apps and counting, install one today

Select any of these categories to find the Apps you need. You will be able to further filter your results later.

Key Attributes
- AppType
- Native App
- Paid
- Distributed for Non-Profit
- Support
- 4 or 5 stars

Salesforce Edition
- Group
- Professional
- Enterprise
- Unlimited
- Home Use
- Developer

Industry Solutions
- Communications
- Education
- Human Resources
- Health
- Manufacturing
- Media
- Nonprofit
- Public Sector

Type of App
- Application
- Add Ons
- Dashboards, Reports
- Sample App Templates
- Integration & Data Management
- Mobile

Function
- Analytics
- Collaboration Tools
- Finance & Administration
- Human Resources
- IT Management
- Marketing
- Partner Relationship Management
- Sales
- Service & Support

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Salesforce Integration

Import, Export & Synchronize Salesforce Data with the Rest of

Figure 1 Force.com AppExchange Functions

For each function (business unit name), the SaaS vendor’s information was gathered. All applications were sorted by rating as highlighted in figure 2:
Here is the key information gathered for each SaaS application. Those are defined as the non-functional criteria and are shown in figure 3.

1. Product Name
2. URL
3. Free or Paid
4. Supported
5. Native Salesforce application
6. Rank
7. Score (rating)

8. Popularity (number of users reviews)

Figure 3: Sales SaaS application non-functional criteria
Table 3 shows the columns included in the spreadsheet of a business unit name non-functional criteria with an example of its corresponding data:

<table>
<thead>
<tr>
<th>Product Name</th>
<th>URL</th>
<th>Free</th>
<th>Supported</th>
<th>Integrated</th>
<th>Rank</th>
<th>Score out of 5</th>
<th>Popularity (number of reviews)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DocuSign</td>
<td><a href="http://docusign.com/">http://docusign.com/</a></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>4</td>
<td>5</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 3: Sales non-functional criteria spreadsheet snapshot

After all the product names and their corresponding websites for each business unit are gathered and documented, the keyword search tool is used to perform the web search to give out the percentage of keyword (functional criteria) hits for each URL provided.

This tool has been created by Lombardi (2008) to support his research for the interaction of Eclipse member firms and is based on the Google Ajax search API. The tool accepts a list of URLs and a list of keywords as a text file and returns a comma separated variable (.csv) output file with the number of occurrence of each keyword and total number of pages in each URL.
4.3 Sales Results

4.3.1 Sales Data Analysis

From the entire list of sales keywords mentioned previously table 4 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits and the ones dropped:

<table>
<thead>
<tr>
<th>Keywords selected</th>
<th>Sales AND tracking</th>
<th>Sales AND territory</th>
<th>Sales AND forecasting</th>
<th>Sales AND contract</th>
<th>E-Signature</th>
<th>Quote AND generation</th>
<th>Quote AND tracking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telemarketing</td>
<td>Analyzing AND tasks</td>
<td>Analyzing AND events</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keywords dropped</td>
<td>Door-to-Door sales tracking</td>
<td>Business-to-business sales tracking</td>
<td>Sales lead scoring</td>
<td>Funnel scorecard</td>
<td>Sales planning</td>
<td>Sales process information</td>
<td>Keep track of customers</td>
</tr>
<tr>
<td>Sales reporting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Sales Keywords

After inputting the 11 keywords and 118 URL’s onto the keyword search tool, the keyword hits results were displayed in an output file which is then uploaded to the R commander tool. From the R commander, PCA can be performed to get the Scree plot. The Scree plot is a plot of the eigenvalues of a correlation matrix. This helps visualize the relative importance of the factors. The Scree test includes looking for the break point in the data where the curve flattens out. The number of data points above the break is normally the number of factors to retain. The Scree plot is shown in graph 1.
Here is the Sales Scree plot:

Graph 1  Sales Scree Plot
From the plot we can see there are up to 5 factors we can use that have an Eigenvalue above 1.0.

4.3.2 Sales Factor Analysis

In order to obtain the factor loadings of our keyword search tool results, factor analysis needs to be performed from the R commander.

In order to make the factors outputs more understandable factor rotation is performed, in this case Varimax is used since it is the best orthogonal rotation method. However, before going any further with the keyword factor loadings, data validation needs to occur as follows.

Two tests need to be performed to determine the factorability of a matrix and they are Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s test of significance test. For the result to be considered statistically valid, the KMO measure of sampling adequacy must be larger than 0.5 and the Bartlett’s test of significance test (Sig) should be smaller than 0.05, to indicate the adequate degree of correlation for factor analysis to converge (Field, 2005; Allen, 2009). Also the higher the cumulative variance to 1 the more accurate the results are. The sales test results are shown in table 5.
<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.998</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Table 5. Sales data validation

The factor loadings for the 5 factors resulting from the factor analysis are shown in table 6:

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quote Generation</td>
<td>0.996</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quote Tracking</td>
<td></td>
<td>0.997</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-Signature</td>
<td></td>
<td></td>
<td>0.136</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Contract</td>
<td></td>
<td></td>
<td>0.124</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Tracking</td>
<td></td>
<td></td>
<td>-0.167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Territory</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.993</td>
</tr>
<tr>
<td>Analyzing Events</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.516</td>
</tr>
<tr>
<td>Sales Pipeline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.761</td>
</tr>
<tr>
<td><strong>Cumulative Variance</strong></td>
<td><strong>0.086</strong></td>
<td><strong>0.168</strong></td>
<td><strong>0.248</strong></td>
<td><strong>0.326</strong></td>
<td><strong>0.63</strong></td>
</tr>
</tbody>
</table>

Table 6. Sales factor loadings

Jdue (2009) states the goal of factor analysis is to find the simple patterns in the pattern of relationships among variables. It seeks to detect if the observed variables can be explained largely or entirely in terms of a much smaller number of variables called factor loadings. Factor loadings are the correlation coefficients between the variables and factors. Factor loadings are the basis for imputing a label to different factors. The factor loading criterion chosen is the Kaiser’s method. Costello et al. (2005) suggested 0.32 loading as a good rule of thumb to be considered for the minimum loading. Reinard (2006) recommends excluding keywords with loading less than 0.6. Since the factor
loadings are high, a threshold of 0.4 has been chosen. This threshold would remove cross loadings and indicate variables with high loadings.

Both the factor loadings corresponding to each keyword and the keyword hits output results can be combined to calculate the weighted factors for each URL. This is done by multiplying each factor with its corresponding keyword weight, then taking the average of each factor for all URL’s, and keeping for each factor the URL’s that are above the average weighted factor.

For each factor the URL’s above the average weighted factors are documented in 5 different spreadsheets. Appendix 2 shows the URL’s for each factor for the sales business unit name. The summary of the factor analysis results are shown in table 7.

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quote Generation</td>
<td>&gt;7.28</td>
<td>16</td>
</tr>
<tr>
<td>Factor 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quote Tracking</td>
<td>&gt; 5.32</td>
<td>17</td>
</tr>
</tbody>
</table>
4.3.3 Sales Cluster Analysis

The Scree plot break happens after four factors. This should mean that there should be four strong factors resulting from PCA. Unfortunately, this is not the case for the sales Scree plot since the first two factors have strong factor loadings higher than 0.4 while as the third factor’s highest factor loading is 0.136. Cluster analysis can be performed on the first two factors. This is done by first documenting the URL’s chosen for factors 1 and 2 in the cluster analysis input file.

Cluster analysis is then performed on the two factors. The graph shows the entire URL’s associated to the two factors and merges the common URL’s. The plot is shown in graph 2.
From the plot it shows that all URL’s are clustered for those two factors. This is done to show for the sales business units how strong each factor is and what are the companies grouped corresponding to each factor.
The summary of the results for the first two strong factors with keyword loadings of above 0.4 taken from table 4 is shown in table 8, followed by the summary of the sales cluster analysis shown in table 9.

<table>
<thead>
<tr>
<th>Factor 1 Quote Generation</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quote generation</td>
<td>0.996</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.086</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 Quote Tracking</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quote Tracking</td>
<td>0.997</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.168</td>
</tr>
</tbody>
</table>

Table 8 Summary of sales factor analysis

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Providers of ...</th>
<th>Percentage of URL’s within the cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Quote Management</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 9 Summary of sales cluster analysis

4.3.4 Sales Factor Analysis Discussion

Table 10 has summarized the sales factor interpretation. The factors are interoperated based on initial knowledge about the definition of selected keywords found in company websites and the literature review. For each factor at least 5 companies have been studied in-depth. This helped the researcher to create a more accurate interpretation of factors.
Factors are named based on their description and the naming can be biased by the researcher’s preference.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quote Generation</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering quote generation software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Quote AND Generation</strong>: With 0.996 Loading, this keyword can be</td>
<td>Management of purchase orders, quotes and proposal generation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpreted as a service for the sales department to create quotes</td>
<td><strong>Example</strong>: CPQ - Configure Price Quote from Cameleon Software</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Popular and Supported</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Quote Tracking</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering quote tracking software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Quote AND Tracking</strong>: With 0.997 Loading, this keyword can be</td>
<td>Populate quotes with relevant customer data automatically, automate workflows for quote approvals,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpreted as a service for the sales department to manage quotes</td>
<td>track quote history and capture data such as close date, probability of winning and competitors</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Popular and Supported</strong></td>
<td><strong>Example</strong>: Configurator, Quote, Pricing and Proposals from BIGMACHINES</td>
</tr>
<tr>
<td>3</td>
<td>Sales Contracts Management and</td>
<td>No factor loadings over 0.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-signatures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sales Territory</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering sales territory software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Sales AND Territory</strong>: With 0.993 Loading, this</td>
<td>Automatically map new territories according to business</td>
</tr>
</tbody>
</table>
The following keyword was used by this factor with loading over 0.4:

**Analyzing AND Events:**
With 0.516 Loading, this keyword can be interpreted to analyze sales events

**Sales AND Pipeline:**
With 0.716 Loading, this keyword can be interpreted to track and manage the sales pipeline

**Highly rated and Integrated**

| 5 | Sales Pipeline and Analyzing Events | The following keyword was used by this factor with loading over 0.4: Analyzing AND Events: With 0.516 Loading, this keyword can be interpreted to analyze sales events | Companies that are offering sales pipeline and analyzing events software provide the following type of solution: Analyzing the outcome of a sales event including marketing campaigns as a result of the event and also managing the event setup and scope Predict sales forecasts, track changes in the sales pipeline and analyze projected performance Example: Pipeline Accelerator from Cloud9 |

Table 10. Sales Factor Interpretation

From table 7 the average weighted factor loadings correspond to how relevant that factor’s URL’s (products) are to the function it provides. Thus they are ranked as follows:

1. Factor 3 “Sales Contracts Management and E-signatures” software there are 41 products relevant to this functionality.
2. Factor 5 “Sales Pipeline and Analyzing Events” software there are 18 products relevant to this functionality.
3. Factor 1 “Quote Generation” software there are 16 products relevant to this functionality.
4. Factor 2 “Quote Tracking” software there are 17 products relevant to this functionality.

5. Factor 3 “Sales Territory Management” software there are 16 products relevant to this functionality.

4.3.5 Sales Cluster Analysis Discussion

Cluster analysis is one useful method that has been used by researchers in different types of research and use mathematical methods to classify similar objects together. A cluster is a set of entities which are alike, and entities from different clusters are not alike (Rui & Wunsh, 2009). Different strategies have been studied to cluster the offerings and K-mean clustering seemed to be the best candidate for this data. Haung (1998) and Macqueen (1967) identified K-means clustering as a good way of clustering large data set by using similarities grouping. K-mean clustering algorithm was developed by J. MacQueen (1967). K-means clustering is an algorithm to classify or to group objects based on attributes/features into K number of groups. The grouping is done by minimizing the sum of squares of distances between data and the corresponding cluster centroid. Thus the purpose of K-mean clustering is to classify the data (Teknomo, 2006).

From the cluster analysis, sales results table 9 shows that both factors can be combined as one. The cluster will be defined as SaaS providers of quote management software. All websites lie within the cluster. That is because any SaaS vendor providing quote generation software will also provide quote tracking software since they go hand-in-hand
and it won’t make sense to separate them. Examples of the top products according to 
keyword weight that provide quote management services are:

1. **Configurator, Quote, Pricing and Proposals** from BIGMACHINE
2. **CPQ - Configure Price Quote** from Cameleon Software
3. **Share Now** from Share Methods
4. **WebSource CPQ (Configure, Price, Quote)** from Webcom Inc.

From the sales plot graph 2 it can be shown that most URL’s are shared between the two 
factors and that is why they form one cluster.

**4.3.6 Sales Managerial Insights**

- There are not many SaaS products specifically for sales since most SaaS products 
  provide marketing solutions. Since it is the marketing’s department job to provide 
  sales with the software they need to function.
- Marketing facilitates the initial phase of the sales process. When the sale comes to 
  a close it is the sales department responsibility to create and maintain the sales 
  quote before transitioning the deal to finance that is why quote management 
  software is essential for the sales department.
- The majority of sales SaaS software that provides quote management solutions is 
  supported and popular.
- Quote generation and tracking form one cluster since they are inter-related as part 
  of quote management software.
4.4 Marketing Results

4.4.1 Marketing Data Analysis

From the entire list of marketing keywords mentioned previously table 11 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>Marketing Keywords selected</th>
<th>Lead AND scoring</th>
<th>Lead AND nurturing</th>
<th>Advertising</th>
<th>Distribution</th>
<th>Market AND Segmentation</th>
<th>Publicity</th>
<th>Promotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet AND marketing</td>
<td>Campaigns</td>
<td>Managing AND leads</td>
<td>Market AND research</td>
<td>Budgeting</td>
<td>PR</td>
<td>Events AND organization</td>
<td></td>
</tr>
<tr>
<td>Search engine AND marketing</td>
<td>Social AND media AND marketing</td>
<td>Sponsors</td>
<td>Cause AND marketing</td>
<td>Demand AND generation</td>
<td>Referral AND marketing</td>
<td>Media</td>
<td></td>
</tr>
<tr>
<td>Keywords dropped</td>
<td>Advertising techniques and tracking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 11: Marketing Keywords

After inputting the 21 keywords and 107 URL’s onto the keyword search tool, the Scree plot is shown in graph 3.

Here is the Marketing Scree plot:
From the plot we can see there are up to 10 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after three factors. This means that three strong factors resulted from PCA.
4.4.2 Marketing Factor Analysis

Table 12 shows the data validation marketing test results before going into factor analysis:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.954</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.615</td>
</tr>
</tbody>
</table>

Table 12: Marketing data validation

Table 13 shows the factor loadings for the 9 factors resulting from the factor analysis:

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
<th>Factor 8</th>
<th>Factor 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td></td>
<td></td>
<td></td>
<td>0.1</td>
<td>-0.145</td>
<td>0.968</td>
<td></td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Budgeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.245</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campaigns</td>
<td>0.782</td>
<td>0.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.12</td>
<td>0.56</td>
<td></td>
</tr>
<tr>
<td>Cause Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.891</td>
<td></td>
</tr>
<tr>
<td>Demand Generation</td>
<td>0.95</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.133</td>
</tr>
<tr>
<td>Distribution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.209</td>
</tr>
<tr>
<td>Events Organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Marketing</td>
<td>0.196</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.144</td>
<td></td>
<td></td>
<td>0.966</td>
</tr>
<tr>
<td>Lead</td>
<td>0.927</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.17</td>
</tr>
<tr>
<td>Nurturing</td>
<td>Lead Scoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managing</td>
<td>0.937</td>
<td>0.206</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leads</td>
<td>0.21</td>
<td>0.961</td>
<td>-0.105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Research</td>
<td></td>
<td></td>
<td></td>
<td>0.401</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Segmentation</td>
<td></td>
<td>0.196</td>
<td>0.186</td>
<td>0.261</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media</td>
<td>0.114</td>
<td>0.971</td>
<td>0.118</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR</td>
<td>0.133</td>
<td>0.793</td>
<td>0.17</td>
<td>0.1</td>
<td>0.353</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referral Marketing</td>
<td></td>
<td></td>
<td></td>
<td>0.995</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search Engine Marketing</td>
<td></td>
<td>0.367</td>
<td>0.895</td>
<td>0.104</td>
<td>0.196</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Media Marketing</td>
<td></td>
<td>0.519</td>
<td>0.715</td>
<td>-0.149</td>
<td>0.116</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsorship</td>
<td></td>
<td>0.249</td>
<td>-0.103</td>
<td>0.148</td>
<td>0.421</td>
<td>-0.133</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.136</td>
<td>0.249</td>
<td>0.342</td>
<td>0.326</td>
<td>0.403</td>
<td>0.515</td>
<td>0.567</td>
<td>0.615</td>
<td>0.684</td>
</tr>
</tbody>
</table>

Table 13: Marketing factor loadings

After calculating the weighted factors and their averages the URL’s above the average weighted factors are documented in 9 different spreadsheets. Appendix 3 shows the URL’s for each factor for the marketing business unit name. The summary of the factor analysis results is shown in table 14.
<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 Marketing Automation</td>
<td>Managing leads, lead nurturing and scoring, internet marketing, demand generation, campaigns, media and PR</td>
<td>&gt; 46.16</td>
<td>18</td>
</tr>
<tr>
<td>Factor 2 Relationship Marketing</td>
<td>Cause and referral marketing and events organization</td>
<td>&gt; 0.000241</td>
<td>4</td>
</tr>
<tr>
<td>Factor 3 Integrated Marketing</td>
<td>Campaigns, PR, media, search engine marketing, social media marketing and sponsorship</td>
<td>&gt; 40.19</td>
<td>16</td>
</tr>
<tr>
<td>Communications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 4 Permission Marketing</td>
<td>Advertising, budgeting, market segmentation, PR, search engine marketing and social media marketing</td>
<td>&gt; -10.84</td>
<td>28</td>
</tr>
<tr>
<td>Factor 5 Lead Management</td>
<td>Lead management and scoring, internet marketing and publicity</td>
<td>&gt; 1.9</td>
<td>17</td>
</tr>
<tr>
<td>Factor 6 Market Research</td>
<td>Market research and segmentation; media and sponsorship</td>
<td>&gt; 14.2</td>
<td>34</td>
</tr>
</tbody>
</table>
Factor 7  
Advertising

Advertising, search engine marketing, social media marketing and sponsorship  

> 5.44  
21

Factor 8  
Internet Marketing

Campaigns, search engine marketing and internet marketing  

> 4.1  
26

Factor 9  
Campaign Management

Advertising; distribution; market segmentation; campaigns and PR  

> 18.8  
28

Table 14 Marketing factor analysis summary

4.4.3 Marketing Cluster Analysis

Since the Scree plot break occurs for the first three factors, cluster analysis can be performed for them. This is done by first documenting the URL’s chosen for factors 1, 2 and 3 in the cluster analysis input file.

Cluster analysis is then performed on the three factors. The following graph shows the entire URL’s associated to the three factors and merges the common URL’s. The plot is shown in graph 4.
From the plot it shows that all URL's are clustered for those three factors. This is done to show the strength of each factor and which grouped companies correspond to which factor for the marketing business unit. In this case factor one is the strongest followed by factor three and then factor two.
The summary of the results for the first three strong factors with keyword loadings of above 0.4 taken from table 9 is shown in table 15 followed by the summary of marketing cluster analysis shown in table 16 and the marketing pie chart that displays the percentages of the number of URL’s per cluster in graph 5.

<table>
<thead>
<tr>
<th>Factor 1 Marketing Automation</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand generation</td>
<td>0.95</td>
</tr>
<tr>
<td>Lead scoring</td>
<td>0.937</td>
</tr>
<tr>
<td>Lead nurturing</td>
<td>0.927</td>
</tr>
<tr>
<td>Campaigns</td>
<td>0.782</td>
</tr>
<tr>
<td><strong>Cumulative Variance</strong></td>
<td>0.136</td>
</tr>
<tr>
<td><strong>Factor 2 Relationship Marketing</strong></td>
<td><strong>Loading</strong></td>
</tr>
<tr>
<td>Event organization</td>
<td>0.995</td>
</tr>
<tr>
<td>Referral marketing</td>
<td>0.995</td>
</tr>
<tr>
<td>Cause marketing</td>
<td>0.891</td>
</tr>
<tr>
<td><strong>Cumulative Variance</strong></td>
<td>0.249</td>
</tr>
<tr>
<td><strong>Factor 3 Integrated Marketing Communications</strong></td>
<td><strong>Loading</strong></td>
</tr>
<tr>
<td>Media</td>
<td>0.971</td>
</tr>
<tr>
<td>PR</td>
<td>0.793</td>
</tr>
<tr>
<td>Social Media Marketing</td>
<td>0.519</td>
</tr>
<tr>
<td><strong>Cumulative Variance</strong></td>
<td>0.342</td>
</tr>
</tbody>
</table>

Table 15. Summary of marketing factor analysis
Table 16  Summary of marketing cluster analysis

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Providers of ....</th>
<th>Percentage of URL’s within the cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Marketing Automation</td>
<td>54.84%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Relationship Marketing</td>
<td>12.9%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Integrated Marketing Communications</td>
<td>32.26%</td>
</tr>
</tbody>
</table>

4.4.4 Marketing Factor Analysis Discussions

Table 17 has summarized the marketing factor interpretation.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marketing Automation</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering marketing automation software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Campaigns</strong>: With 0.782 Loading, this keyword can be interpreted as a</td>
<td>• E-mail campaigns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>service for the marketing department to create campaigns</td>
<td>• Stay in touch campaigns for all prospects that are not immediately ready to engage with sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>• Develop automated nurturing campaigns</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Demand AND Generation</strong>: With 0.95 Loading, this keyword can be</td>
<td>• Maximizing lead generation by developing lead lifecycles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpreted as a service that drives awareness and interest in a</td>
<td>• Campaigns that ensures leads will never grow stagnant or lost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>company’s products or services</td>
<td>Example: Campaign Management from Eloqua</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Demand generation tools such as campaign management, lead management, marketing analysis, and data management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Lead AND Nurturing</strong>: With 0.927 Loading, this keyword can be</td>
<td>Example: Demand Generation from Marketo</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpreted to ensure leads are properly nurtured and maintained</td>
<td>Lead nurturing which include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>• Building relationships with qualified prospects that are not yet ready to speak with sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Lead AND Scoring</strong>: With 0.937 Loading, this keyword can be</td>
<td>• Trigger targeted messages to prospects based on specific behaviors or profile updates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpreted to ensure leads are properly scored and ranked</td>
<td>• Automate multi-step marketing programs that build relationships with qualified prospects over</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Popular, Highly rated,</strong></td>
<td></td>
</tr>
</tbody>
</table>
### 2 Relationship Marketing

**Integrated and Supported**

The following keyword was used by this factor with loading over 0.4:

**Cause AND Marketing:** With 0.891 Loading, this keyword can be interpreted as a service that facilitates cause marketing.

**Events AND Organization:** With 0.995 Loading, this keyword can be interpreted as a service that facilitates in organizing events.

**Referral AND Marketing:** With 0.995 Loading, this keyword can be interpreted as ensuring promotion of products or services to new customers through referrals.

| Companies that are offering relationship marketing software provide the following type of solution: Develop “cause marketing” campaigns and organize “cause marketing” events. Organize product launches, webcasts, press conferences, web seminars and promotional events. Develop digital marketing tools such as blogs, video broadcasts and digital brand engagement to help in referral marketing.
|---|
| **Example:** Lead Scoring from Marketo

Lead scoring which include:

- Automatically qualifying leads and measuring their interest and engagement
- Track online activity to measure buying interest and sales-readiness
- Decrease scores over time based on inactivity.

**Example:** Lead Nurturing from Marketo

- Automatically qualifying leads and measuring their interest and engagement
- Track online activity to measure buying interest and sales-readiness
- Decrease scores over time based on inactivity.
| Integrated Marketing Communications | The following keyword was used by this factor with loading over 0.4:  
**Media:** With 0.971 Loading, this keyword can be interpreted to take advantage of the media for marketing purposes  
**Public AND Relations:** With 0.793 Loading, this keyword can be interpreted to maintain the public image of the business  
**Social AND Media AND Marketing:** With 0.519 Loading, this keyword can be interpreted to allow people to build social and business connections, share information and collaborate on projects online  
**Popular, Highly rated, and Supported** | Companies that are offering integrated marketing communications software provide the following type of solution:  
Creating media products, applications and campaigns.  
Track social media conversations and web traffic  
**Example:** gURL from Genius  
Protect the organization’s image and ensure compliance across all channels to prevent PR issues  
**Example:** Gryphon from PrivacyAdvisor  
Turn social media data into value by using reports, dashboards and lead automation capabilities from sources such as FaceBook, LinkedIn, blogs and Twitter.  
**Example:** SEO for SalesForce from DemandResults |
| 4 | Permission Marketing | The following keyword was used by this factor with loading over 0.4:  
**Search AND Engine AND Marketing:** With 0.895 Loading, this keyword can be interpreted to promote company websites by increasing their visibility in search engine result pages  
**Social AND Media AND Marketing:** With 0.715 Loading, this keyword can be interpreted to allow people to build social and business connections, share information and collaborate on projects online  
**Supported** | Companies that are offering permission marketing software provide the following type of solution:  
- Creating search engine marketing campaigns  
- Creating associated site landing page content that are integrated with other media  
- Making sure to deliver site visitors to precisely what they are searching for  
**Example:** PageVester - Landing Pages Creation from Acquisio  
Turn social media data into value by using reports, dashboards and lead automation capabilities from sources such as FaceBook, LinkedIn, blogs and Twitter.  
**Example:** SEO for SalesForce from DemandResults |
| 5 | Lead Management | The following keyword was used by this factor with loading over 0.4:  
**Managing AND Leads:** With 0.961 Loading, this keyword can be interpreted to facilitate a business connection between its outgoing consumer advertising and the responses to that advertising  
**Publicity:** With 0.64 Loading, this keyword can be interpreted to facilitate the promotion | Companies that are offering lead management software provide the following type of solution:  
- Capturing and managing leads. Data planning, lead planning, lead qualification, lead routing, lead nurturing and metrics.  
**Example:** CRM Accelerator Workflow from Sales Fusion  
In order to gain publicity, promotions and lead generation need to be part of the solution provided.  
**Example:** BoldChat Pro from |
<table>
<thead>
<tr>
<th>6</th>
<th>Market Research</th>
<th>of the business Supported and Integrated</th>
<th>BoldChat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering market research software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Market AND Research:</strong> With 0.401 Loading, this keyword can be interpreted to help in gathering information about markets or customers</td>
<td>Create customer, employee, and website surveys. Create online forms to gather information such as partner, event and product registration. Also launching and reporting on those surveys and forms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Popular, Supported and Low Rated</strong></td>
<td><strong>Example:</strong> Market Research Surveys from Vanguard Vista</td>
</tr>
<tr>
<td>7</td>
<td>Advertising</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering advertising software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Advertising:</strong> With 0.968 Loading, this keyword can be interpreted to ensure the business product reaches a vast number of customers</td>
<td>Creating successful advertising programs to create lead relationships, awareness and brand value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Sponsorship:</strong> With 0.421 Loading, this keyword can be interpreted as a form of advertising</td>
<td><strong>Example:</strong> BullsEye from 3 Markeeters</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Popular and Supported</strong></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Internet Marketing</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering internet marketing software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Internet AND Marketing:</strong> With 0.966 Loading, this keyword can be interpreted to</td>
<td>Internet marketing solutions such as search engine marketing, social media</td>
</tr>
<tr>
<td>9</td>
<td>Campaign Management</td>
<td>The following keyword was used by this factor with loading over 0.4: <strong>Campaigns:</strong> With 0.56 Loading, this keyword can be interpreted as a service for the marketing department to create campaigns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Supported and Low Rated</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Companies that are offering marketing automation software provide the following type of solution:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• E-mail campaigns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stay in touch campaigns for all prospects that are not immediately ready to engage with sales</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Develop automated nurturing campaigns</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Maximizing lead generation by developing lead lifecycles</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Campaigns that ensures leads will never grow stagnant or lost</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Example:</strong> Lead Generation from Marketo</td>
<td></td>
</tr>
</tbody>
</table>

Table 17 Marketing Factor Interpretation

From table 13 the average weighted factor loadings correspond to how relevant that factor’s URL’s are to the function it provides. Thus they are ranked as follows:

1. Factor 1 “Market Automation” software there are 18 products relevant to this functionality
2. Factor 3 “Integrated Marketing Communications” software there are 16 products relevant to this functionality
3. Third factor 9 “Campaign Management” software there are 28 products relevant to this functionality
4. Fourth factor 6 Market Research” software there are 34 products relevant to this functionality
5. Fifth factor 7 “Advertising” software there are 21 products relevant to this functionality
6. Sixth factor 8 “Internet Marketing” software there are 26 products relevant to this functionality
7. Seventh factor 5 “Lead Management” software there are 17 products relevant to this functionality
8. Eighth factor 2 “Relationship Marketing” software there are 4 products relevant to this functionality
9. Factor 4 “Permission Marketing” software there are 28 products relevant to this functionality.

4.4.5 Marketing Cluster Analysis Discussion

From the cluster analysis, marketing results table 15 shows that each factor forms its own cluster. That is because each cluster provides a different functionality than the other and thus different SaaS applications. Examples of the top products for the first cluster according to keyword weight that provide marketing automation services are:

1. Marketing Automation, Lead Management and Email Marketing from Marketo
2. Marketing Automation, Demand Generation, Email Marketing Solution
   from Genius Inc.

3. Eloqua Express from Eloqua

4. eTrigue Professional from eTrigue

Examples of products for the second cluster according to keyword weight that
provide relationship marketing services are:

1. ZoomInfo for Salesforce.com from Zoominfo

2. NetProspex Verified Business Contacts from NetProspex

3. Demandbase for Appexchange from Demandbase

4. Lead and Prospect Planner from OneSource

Examples of products for the third cluster according to keyword weight that
provide integrated marketing communications services are:

1. SEO for Salesforce from DemandResults

2. SalesView: Drive Sales Productivity with Integrated Sales Intelligence
   from InsideView

3. BrainShark for SalesForce from BrainShark

4. Clicktools from Clicktools

From the marketing plot graph 4 it can be shown that most URL’s are a part of factor 1
followed by factor 3 with a few shared between them such as salesfusion, and finally a
few URL’s are part of factor 2. This is also demonstrated on the cluster pie chart graph
12. The reason for that is that marketing automation is essential for any marketing
business unit functionality, while as integrated marketing communication is the future of marketing and that is why the number of URL's is growing.

4.4.6 Marketing Managerial Insights

- There are many SaaS products available for marketing since most Force.com SaaS products provide marketing solutions. It is the marketing department job to provide sales with the software they need to function and leads to go after.

- Marketing automation is the use of technology to manage and automate the process of converting prospective customers into actual buyers. By automating the various tasks and workflows involved in demand generation, lead management, and sales and marketing alignment, marketing automation.

  "Fifty-four percent of firms with mature lead management practices employ specialized applications that help them manage, nurture, score, and route leads compared with only 15% of less mature firms." - How Technology Improves Lead Management, Forrester Research (Marketo, 2009).

- Relationship marketing as a form of direct marketing which emphasizes on customer retention and satisfaction. This results from marketing automation, integrated marketing communication like social media marketing, search optimization, lead generation and PR. Relationship marketing is an essential final and on-going part of the marketing process.

- Integrated marketing communication includes social media marketing (usually center on efforts to create content that attracts attention and encourages readers to
share it with their social network), search engine optimization, media marketing, affiliate programs, E-mail campaigns, blogs, public relations and industry relations.

- Social media marketing is increasing vastly, 40% of demand results survey respondents reported that they had made a purchase based on an ad they had seen on a social media site, while the vast majority welcomed advertising in social media experiences.

- The majority of marketing SaaS software that provides marketing automation and integrated marketing communication solutions is highly rated, supported and popular. While as relationship marketing SaaS software’s are free, highly rated but unpopular (not many people use it).

4.5 Product Management Results

4.5.1 Product Management Data Analysis

From the entire list of product management keywords mentioned previously table 18 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>Product Management</th>
<th>Keywords selected</th>
<th>Keywords dropped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Product AND definition</td>
<td>Gathering market requirements</td>
</tr>
<tr>
<td></td>
<td>Product AND management</td>
<td>Product lifecycle requirements</td>
</tr>
<tr>
<td></td>
<td>Product AND planning</td>
<td>Product lifecycle requirements</td>
</tr>
<tr>
<td></td>
<td>Product AND promotion</td>
<td>Competiton</td>
</tr>
<tr>
<td></td>
<td>Catalogue</td>
<td>Product AND documentation</td>
</tr>
</tbody>
</table>

Table 18. Product Management Keywords
After inputting the 7 keywords and 44 URL's onto the keyword search tool, the plot is shown in graph 6.

Here is the Product Management Scree plot:
From the plot we can see there are up to 3 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after two factors. This means that two strong factors resulted from PCA.

### 4.5.2 Product Management Factor Analysis

Table 19 shows the data validation product management test results before going into factor analysis.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.998</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.561</td>
</tr>
</tbody>
</table>

Table 19. Product management data validation

Table 20 shows the factor loadings for the 3 factors resulting from the factor analysis.

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalogue</td>
<td>-0.143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>0.959</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>Product Definition</td>
<td>0.109</td>
<td>0.52</td>
<td>0.175</td>
</tr>
<tr>
<td>Product Documentation</td>
<td>-0.415</td>
<td>0.154</td>
<td></td>
</tr>
<tr>
<td>Product Management</td>
<td>0.359</td>
<td>0.238</td>
<td>0.898</td>
</tr>
</tbody>
</table>
Table 20: Product Management factor loadings

| Product Planning | -0.218 |
| Product Promotion | -0.104 | 0.217 |
| Cumulative Variance | **0.323** | 0.466 | **0.561** |

Table 20: Product Management factor loadings

After calculating the weighted factors and their averages the URL’s above the average weighted factors are documented in 3 different spreadsheets. Appendix 4 shows the URL’s for each factor for the Product management business unit name. Table 21 shows the summary of the factor analysis results.

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 Competitive Analysis</td>
<td>Competitive analysis, defining new products and manage products</td>
<td>&gt; -12.67</td>
</tr>
<tr>
<td>Factor 2 Product Design</td>
<td>Defining new products, manage products, product documentation and monitoring competition</td>
<td>&gt; 16.67</td>
</tr>
<tr>
<td>Factor 3 Product Management</td>
<td>Defining new products, manage products and product promotion</td>
<td>&gt; 11.39</td>
</tr>
</tbody>
</table>

Table 21: Product management factor analysis summary
4.5.3 Product Management Cluster Analysis

Since the Scree plot break occurs for the first two factors, cluster analysis can be performed for those two factors. This is done by first documenting the URL’s chosen for factors 1 and 2 in the cluster analysis input file.

Cluster analysis is then performed on the two factors. The graph shows the entire URL’s associated to the two factors and merges the common URL’s. The plot is shown in graph 7.
From the plot it shows that all URL's are clustered for those two factors. This is done to show the strength of each factor and which grouped companies correspond to which factor for the marketing business unit.
The summary of the results for the first three strong factors with keyword loadings of above 0.4 taken from table 14 is shown in table 22 followed by the summary of product management cluster analysis shown in table 23 and the product management pie chart that displays the percentages of the number of URL’s per cluster in graph 8.

<table>
<thead>
<tr>
<th>Factor 1 Competitive Analysis</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>0.959</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.323</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 Product Design</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Definition</td>
<td>0.991</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.466</td>
</tr>
</tbody>
</table>

Table 22 Summary of product management factor analysis

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Providers of ....</th>
<th>Percentage of URL’s within the cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Competitive Analysis</td>
<td>40%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Product Design</td>
<td>60%</td>
</tr>
</tbody>
</table>

Table 23. Summary of product management cluster analysis
4.5.4 Product Management Factor Analysis Discussions

Table 24 summarizes the product management factor interpretation.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Competitive Analysis</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering competitive analysis software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Competition</strong>: With 0.959 Loading, this keyword can be interpreted as a</td>
<td>Unfortunately, there still isn’t any SaaS product out there that provides a specific solution for competitive analysis. However, there are various marketing metrics and analytics SaaS tools that can do a similar function when combined.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>service for the product management team to compare their products in terms of pricing and functionality with their competitors</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Product Design</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Product AND Definition:</strong> With 0.52 Loading, this keyword can be interpreted as an initial service to identify, define and design the organization’s products</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Companies that are offering product definition software provide the following type of solution:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unfortunately, there aren’t many SaaS product out there that provides a specific solution for product definition. However, there are various marketing metrics and analytics SaaS tools that can do a similar function when combined.</td>
<td></td>
</tr>
</tbody>
</table>

| 3 | Product Management | The following keyword was used by this factor with loading over 0.4: |
|   |                    | **Product AND Management:** With 0.898 Loading, this keyword can be interpreted to ensure organization products are managed properly |
|   |                    | **Highly rated, Unpopular, Free, Integrated and Supported** |
|   |                    | Companies that are offering product management software provide the following type of solution: |
|   |                    | Planning or forecasting all products at any stage of the product lifecycle. |
|   |                    | **Example:** Decipher Analytics from DecipherTech |

From table 19 the average weighted factor loadings correspond to how relevant that factor’s URL’s are to the function it provides. Thus they are ranked as follows:

1. Factor 1 “Monitoring Competition” software there are 19 products somewhat relevant to this functionality
2. Factor 3 “Product Definition” software there are 18 products somewhat relevant to this functionality

3. Factor 4 “Product Management” software there are 18 products relevant to this functionality

4. Factor 2 “Competitive Analysis” does not have any relevant products as mentioned in the interpretation table.

4.5.5 Product Management Managerial Insights

- There is a lot of room for SaaS vendors to research and develop product management software tools that provides solutions for competitive analysis such as comparing pricing, functionality and benefits to users with their own products.

- Product management is a niche business unit and is always considered as a part of the marketing business unit therefore there aren’t many SaaS solutions for it.

- The reason product management software is highly rated and unpopular is because not many users know about those tools or use it. However, users who know about it are satisfied with the outcome and rate it highly.

- The product management software tools are free, integrated and supported because it’s a new market offer. Thus it’s attracting as many users as possible without adding a price tag except for premium services. It also offers support and integration with the user’s systems.
4.6 Support and Maintenance Results

4.6.1 Support and Maintenance Data Analysis

From the entire list of support and maintenance keywords mentioned previously table 25 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>Support and Maintenance Keywords</th>
<th>Outsourcing</th>
<th>Call AND center</th>
<th>Helpdesk</th>
<th>Customer AND service</th>
<th>SLA</th>
<th>Customer AND service</th>
<th>Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keywords selected</td>
<td>IT</td>
<td>Community</td>
<td>E-mail AND integration</td>
<td>Knowledge AND base</td>
<td>Contract and management</td>
<td>Ticket</td>
<td>Licensees</td>
</tr>
<tr>
<td>Keywords dropped</td>
<td>Automation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 25 Support and Maintenance Keywords

After inputting the 13 keywords and 57 URL's onto the keyword search tool, the plot is shown in graph 9.

Here is the Support and Maintenance Scree plot:
From the plot we can see there are up to 7 factors we can use with an Eigenvalue higher than 1.0. However, the Scree plot break happens after four factors. This means that four strong factors resulted from PCA.
4.6.2 Support and Maintenance Factor Analysis

Table 26 shows the data validation support and maintenance test results before going into factor analysis.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.999</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.575</td>
</tr>
</tbody>
</table>

Table 26: Support and maintenance data validation

Table 27 shows the factor loadings for the 7 factors resulting from the factor analysis:

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
<th>Factor 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Center</td>
<td>0.876</td>
<td></td>
<td>0.146</td>
<td>0.163</td>
<td>0.196</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td>0.943</td>
<td></td>
<td>0.229</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Service</td>
<td>0.159</td>
<td>-0.11</td>
<td></td>
<td>0.112</td>
<td>0.497</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-mail Integration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helpdesk</td>
<td>0.159</td>
<td></td>
<td>0.141</td>
<td>0.9</td>
<td>0.129</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>0.272</td>
<td>0.278</td>
<td>0.392</td>
<td>0.383</td>
<td></td>
<td>0.189</td>
<td></td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>-0.107</td>
<td>0.416</td>
<td>0.304</td>
<td>-0.119</td>
<td>0.117</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After calculating the weighted factors and their averages the URL’s above the average weighted factors are documented in 7 different spreadsheets. Appendix 5 shows the URL’s for each factor for the Support and Maintenance business unit name. Table 28 shows the summary of the factor analysis results.

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call Center Operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call center, customer service, Helpdesk, IT, outsourcing technical support</td>
<td>&gt; 69.09</td>
<td>22</td>
</tr>
<tr>
<td>Factor 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support Services Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLA and ticket tracking and community/social networking and IT</td>
<td>&gt; 25.83</td>
<td>19</td>
</tr>
<tr>
<td>Factor 3</td>
<td>Knowledge Base</td>
<td>&gt; 20.46</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Factor 4</td>
<td>Support Metrics</td>
<td>&gt; 36.74</td>
</tr>
<tr>
<td></td>
<td>Call center, Helpdesk, IT, KB, Licensees, reporting services</td>
<td></td>
</tr>
<tr>
<td>Factor 5</td>
<td>Licensees Management</td>
<td>&gt; 11.33</td>
</tr>
<tr>
<td></td>
<td>Community/social networking and Licensees</td>
<td></td>
</tr>
<tr>
<td>Factor 6</td>
<td>Helpdesk</td>
<td>&gt; 13.44</td>
</tr>
<tr>
<td></td>
<td>Call center, customer service and Helpdesk</td>
<td></td>
</tr>
<tr>
<td>Factor 7</td>
<td>Customer Service</td>
<td>&gt; -13.24</td>
</tr>
<tr>
<td></td>
<td>Call center, customer service, Helpdesk, IT and knowledge base</td>
<td></td>
</tr>
</tbody>
</table>

Table 28 Support and maintenance factor analysis summary

4.6.3 Support and Maintenance Cluster Analysis

Since the Scree plot break occurs for the first four factors, cluster analysis can be performed for those four factors. This is done by first documenting the URL’s chosen for factors 1, 2, 3 and 4 in the cluster analysis input file.
Cluster analysis is then performed on the four factors. The graph shows the entire URL’s associated to the four factors and merges the common URL’s. The plot is shown in graph 10.

Graph 10. Support and maintenance Fruchterman Reingold plot
From the plot it shows that all URL’s are clustered for those four factors. This is done to show the strength of each factor and which grouped companies correspond to which factor for the support and maintenance business unit. In this case factor three is the strongest followed by factor one, then factor two and finally factor four.

The summary of the results for the first four strong factors with keyword loadings of above 0.4 taken from table 19 is shown in table 29 followed by the summary of support and maintenance cluster analysis shown in table 30 and the support and maintenance pie chart that displays the percentages of the number of URL’s per cluster in graph 11.

<table>
<thead>
<tr>
<th>Factor 1 Call Center Operations</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Center</td>
<td>0.95</td>
</tr>
<tr>
<td>Outsourcing</td>
<td>0.937</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.186</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 Support Services Management</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticket</td>
<td>0.995</td>
</tr>
<tr>
<td>Community</td>
<td>0.995</td>
</tr>
<tr>
<td>SLA</td>
<td>0.508</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.265</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3 Knowledge Base</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Base</td>
<td>0.46</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.342</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4 Support Metrics</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting</td>
<td>0.978</td>
</tr>
</tbody>
</table>
Table 29: Summary of support and maintenance factor analysis

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Providers of ....</th>
<th>Percentage of URL's within the cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Call Center Operations</td>
<td>34.29%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Support Services Management</td>
<td>17.14%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Knowledge Base</td>
<td>42.86%</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>Support Metrics</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

Table 30: Summary of support and maintenance cluster analysis

Support and Maintenance

Graph 11: Cluster analysis support and maintenance pie chart
4.6.4 Support and Maintenance Factor Analysis Discussions

Table 31 summarizes the support and maintenance factor interpretation.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Call Center Operations</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering call center operations software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Call AND Center</strong>: With 0.876 Loading, this keyword can be interpreted as a service to facilitate the management of call centers</td>
<td>Real-time flow of interactions between CRM applications and call center solutions. This includes agent-desktop and routing of interactions. Facilitate real-time information flow via interactive voice response systems, E-mail servers and web chat applications. E-mail management systems that facilitate e-mail routing, e-mail content analysis and response management. Ensure that the right customer reaches the right agent at the right time. Outsourcing operations such as staffing solutions, CRM engagements, professional services and customer self-services.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Outsourcing</strong>: With 0.775 Loading, this keyword can be interpreted to facilitate outsourcing operations and solutions</td>
<td><strong>Example</strong>: AMC Multi-Channel Integration Server from AMC Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Supported</strong></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Support Services Management</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering support services software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Community</strong>: With 0.943 Loading, this keyword</td>
<td>Developing enterprise</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Knowledge AND Base:</strong> With 0.416 Loading, this keyword can be interpreted to manage the knowledge base</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Supported and</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| SLA: With 0.508 Loading, this keyword can be interpreted as a service that defines and manages Service Level Agreements |
| **Ticket AND Management:** With 0.991 Loading, this keyword can be interpreted as a service that facilitates the development and management of ticketing systems |
| **Supported and Integrated** |

<table>
<thead>
<tr>
<th>3</th>
<th>Knowledge Base</th>
<th>Companies that are offering knowledge base software provide the following type of solution:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Creates a knowledge base according to all the cases created and their responses, answers and solutions. Automate knowledge base where when a case is created</td>
</tr>
<tr>
<td></td>
<td><strong>Knowledge AND Base:</strong> With 0.416 Loading, this keyword can be interpreted to manage the knowledge base</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Supported and</strong></td>
<td></td>
</tr>
<tr>
<td>Integrated</td>
<td>the knowledge base tool would identify the question and provide suggested answers right away without the need of an agent. Shortcuts can be created to answer commonly asked questions. Agents can search the knowledge base by key words and find shortcuts to quickly answer email and web chat interactions. <strong>Example:</strong> IntelliResponse from ATG</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Support Metrics</td>
<td>The following keyword was used by this factor with loading over 0.4: <strong>Reporting:</strong> With 0.978 Loading, this keyword can be interpreted to ensure reporting on support metrics is done properly <strong>Supported</strong> Companies that are offering support metrics software provide the following type of solution: Creating reports and dashboards for support analytics including virtualization, interactive and ad-hoc reports. Scheduled reports. Report design. Business logic embedding including formulas and workflows. Support metrics include initial response time, case origin, severity, case reason, date cases opened and closed and status of case. <strong>Example:</strong> Style Intelligence - Reporting &amp; Dashboard App from InetSoftware</td>
<td></td>
</tr>
<tr>
<td>Licensees Management</td>
<td>The following keyword was used by this factor with loading over 0.4: <strong>Licensees AND Management:</strong> With 0.974 Loading, this keyword can be interpreted to ensure user, product and... Companies that are offering licensees management software provide the following type of solution: The ability to issue various types of software licenses for products or product groups. Manage license types such as trial, subscription, volume,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Support licensees are managed properly</td>
<td>enterprise and perpetual licenses and also support contracts</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Supported and Integrated</strong></td>
<td><strong>Example:</strong> Trax from RipTide</td>
</tr>
</tbody>
</table>

6 | Helpdesk | The following keyword was used by this factor with loading over 0.4: 
|   |   | **Helpdesk:** With 0.9 Loading, this keyword can be interpreted to provide helpdesk solutions for not just support but also HR and IT 
|   |   | **Highly rated, Unpopular, Supported and Integrated** |
|   |   | Companies that are offering helpdesk software provide the following type of solution: 
|   |   | Setting customers to the right agents right away. Manage phone, E-mail and chat channels all in one application. Track all customer interactions. 
|   |   | **Example:** OnDemand Contact Center from Contactual |

7 | Customer Service | The following keyword was used by this factor with loading over 0.4: 
|   |   | **Customer AND Service:** With 0.497 Loading, this keyword can be interpreted to ensure customer service optimization and agent performance 
|   |   | **Unpopular, Low rated and Supported** |
|   |   | Companies that are offering customer service software provide the following type of solution: 
|   |   | Routing the most appropriate agent to better serve customers. Display information related to the caller. View customer service report metrics such as customer average wait-time, total number of calls diverted to an agent, total number of calls abounded, agent average handle time and total number of handled calls. 
|   |   | **Example:** Web Impresario from Elix |

Table 31 Support and Maintenance Factor Interpretation

From table 25 the average weighted factor loadings correspond to how relevant that factor’s URL’s are to the function it provides. Thus they are ranked as follows:
1. Factor 1 “Call Center Operations” software there are 22 products relevant to this functionality

2. Factor 4 “Support Metrics” software there are 25 products relevant to this functionality

3. Factor 2 “Support Services Management” software there are 19 products relevant to this functionality

4. Fourth factor 3 “Knowledge Base” software there are 28 products relevant to this functionality

5. Fifth factor 6 “Helpdesk” software there are 37 products relevant to this functionality

6. Sixth factor 5 “Licensees Management” software there are 33 products relevant to this functionality

7. Factor 7 “Customer Service” software does not have many relevant products.

4.6.5 Support and Maintenance Cluster Analysis Discussion

From the cluster analysis support and maintenance results table 27 shows that each factor forms its own cluster. That is because each cluster provides a different functionality than the other and thus different SaaS applications. Examples of the top products for the first cluster according to keyword weight that provide call center operations are:

1. The Killer Config from Forcebydesign

2. AMC Multi-Channel Integration Server from AMC Technology

3. Walker PowerInsights from Walkerinfo
4. **OnDemand Call Center Platform** from LiveOps

Examples of products for the second cluster according to keyword weight that provide support management services are:

1. **Integrated customer service and defect tracking** from TeamSupport
2. **Contact Center CTI Agent Adapter** from inContact
3. **Get Satisfaction Integration** from Demandbase
4. **Supportal** from JiveSoftware

Examples of products for the third cluster according to keyword weight that provide knowledge base services are:

1. **Linvio Portal** from Linvio
2. **IntelliResponse** from ATG
3. **Percent Complete** from DemandResults
4. **iLinc for SalesForce** from iLinc

Examples of products for the fourth cluster according to keyword weight that provide support metrics services are:

1. **Style Intelligence for Salesforce - Reporting & Dashboard** from InetSoftware
2. **IntelliResponse** from ATG
3. **Time Track** from AmericanDataCompany
4. **Feedback Analytics** from Kampyle
From the support and maintenance plot graph 10 it can be shown that most URL’s are a part of factor 3 followed by factor 1 and finally a few URL’s are part of factor 2 and 4. Factors 1 and 2 share a lot URL’s such as inContact, AmericanDataCompany and Zoomerang, since call center operations and support services management almost have the same functionality. The reason factor 3 has a lot of URL’s is because knowledge base products are shared in almost all support and maintenance SaaS providers.

4.6.6 Support and Maintenance Managerial Insights

- Support and maintenance SaaS tools provides solutions on a large scale enterprise level
- Support and maintenance SaaS tools have average ratings and not many reviews because most support and maintenance software is built in-house or on-premise and users are not at that point yet to take advantage of the support and maintenance SaaS tools available
- Support services, helpdesk, and customer services SaaS tool providers have almost the same SaaS features. Since they all have the same functionality. The differences are support services are mainly used by customers and include ticket management and workflow features. Helpdesk is used for both customers and internal users and relies more on the user interface. Customer service can also be used by business units other than support and maintenance and that’s why its SaaS products are not specific to just the support and maintenance business unit.
• Knowledge base is in almost all support and maintenance SaaS tools since it is an essential part of its functionality

4.7 Project Management Results

4.7.1 Project Management Data Analysis

From the entire list of project management keywords mentioned previously table 32 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>Project Management</th>
<th>Keywords selected</th>
<th>Keywords dropped</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Project AND initiation</td>
<td>Resources allocation</td>
</tr>
<tr>
<td></td>
<td>Project AND planning</td>
<td>Stakeholder analysis</td>
</tr>
<tr>
<td></td>
<td>Project AND execution</td>
<td>Plan contracting</td>
</tr>
<tr>
<td></td>
<td>monitoring</td>
<td>Source selection</td>
</tr>
<tr>
<td></td>
<td>Project AND completion</td>
<td>Informatio n distribution</td>
</tr>
<tr>
<td></td>
<td>Project AND risks</td>
<td>Team development</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
<td>Contract</td>
</tr>
</tbody>
</table>

Table 32: Project Management Keywords

After inputting the 14 keywords and 9 URL’s onto the keyword search tool the R tool gives out an error message. That is because the number of keywords is larger than the number of URL’s. Since there aren’t many available standalone (usually part of other business unit applications) SaaS project management applications out there. Therefore there won’t be any results for this specific business unit name.
4.8 IT Results

4.8.1 IT Data Analysis

From the entire list of IT keywords mentioned previously table 33 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>IT Keywords selected</th>
<th>Document AND sharing</th>
<th>Conversio n</th>
<th>Storage</th>
<th>Backups</th>
<th>Replication</th>
<th>Data AND entry</th>
<th>Data and migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data and Validation</td>
<td>Statistical AND analysis</td>
<td>Data AND warehousing</td>
<td>Data AND mining</td>
<td>Data AND transmission</td>
<td>Virus AND tracker</td>
<td>Content AND tracker</td>
<td></td>
</tr>
<tr>
<td>Reporting</td>
<td>Profanity tracker</td>
<td>E-mail</td>
<td>Data tabulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 33: IT keywords

After inputting the 14 keywords and 26 URL’s onto the keyword search tool, the plot is shown in graph 12.

Here is the IT Scree plot:
From the plot we can see there are up to 7 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after only one factor. This means that only one strong factor resulted from PCA.
Table 34 shows the data validation IT test results before going into factor analysis

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.134</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.746</td>
</tr>
</tbody>
</table>

Table 34: IT data validation

Since KMO is less than 0.5 factor analysis won’t be accurate for the IT business unit. Therefore there won’t be any factor analysis results for this specific business unit name.

4.9 Finance Results

4.9.1 Finance Data Analysis

From the entire list of finance keywords mentioned previously table 35 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>Finance Keywords selected</th>
<th>Budgeting</th>
<th>Payroll</th>
<th>Equities</th>
<th>Travel</th>
<th>Vacation</th>
<th>Working AND capital</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit</td>
<td>Bonds</td>
<td>Sharehol der</td>
<td>Audits</td>
<td>Treasury</td>
<td>Investme nt</td>
<td>Invoice</td>
<td></td>
</tr>
<tr>
<td>Accounts AND payable</td>
<td>Billing AND shipping</td>
<td>Cash AND flow</td>
<td>Debt</td>
<td>Financial AND reports</td>
<td>Statutory AND holiday</td>
<td>Compensat ion</td>
<td></td>
</tr>
<tr>
<td>Tax administration</td>
<td>Cash holding</td>
<td>Contract setup</td>
<td>Public debt</td>
<td>Tax reports</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 35: Finance keywords
After inputting the 21 keywords and 55 URL's onto the keyword search tool, the plot is shown in graph 13.

Here is the Finance Scree plot:
From the plot we can see there are up to 6 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after three factors. This means that three strong factors resulted from PCA.

Table 26 shows the data validation Finance test results before going into factor analysis.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>5.72e-11</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.618</td>
</tr>
</tbody>
</table>

Table 36 Finance data validation

Since KMO is less than 0.5 factor analysis won’t be accurate for the Finance business unit. Therefore there won’t be any factor analysis results for this specific business unit name.

4.10 HR Results

4.10.1 HR Data Analysis

From the entire list of HR keywords mentioned previously table 37 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:
After inputting the 9 keywords and 15 URL’s onto the keyword search tool, the plot is shown in graph 14.

Here is the HR Scree plot:

<table>
<thead>
<tr>
<th>Keywords selected</th>
<th>Recruitme nt</th>
<th>Training</th>
<th>Evaluati on</th>
<th>Promotion s</th>
<th>Transfer</th>
<th>Record AND keeping</th>
<th>Career AND developme nt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal</td>
<td>Employee AND benefits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competency mapping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 37: HR keywords
From the plot we can see there are up to 6 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after three factors. This means that three strong factors resulted from PCA.
4.10.2 HR Factor Analysis

Table 38 shows the data validation HR test results before going into factor analysis.

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt;= 0.5</td>
<td>0.78</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.872</td>
</tr>
</tbody>
</table>

Table 38: HR data validation

Table 39 shows the factor loadings for the 6 factors resulting from the factor analysis:

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal</td>
<td></td>
<td>0.87</td>
<td></td>
<td>0.255</td>
<td></td>
</tr>
<tr>
<td>Career Development</td>
<td></td>
<td>0.958</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>0.799</td>
<td>0.108</td>
<td>-0.185</td>
<td>-0.127</td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.897</td>
<td>0.214</td>
<td>-0.148</td>
<td>0.123</td>
<td></td>
</tr>
<tr>
<td>Promotions</td>
<td>0.902</td>
<td>0.377</td>
<td></td>
<td>0.104</td>
<td></td>
</tr>
<tr>
<td>Record Keeping</td>
<td></td>
<td></td>
<td>-0.127</td>
<td>-0.155</td>
<td></td>
</tr>
<tr>
<td>Recruitment</td>
<td>-0.103</td>
<td>0.232</td>
<td>0.706</td>
<td>0.595</td>
<td>-0.234</td>
</tr>
<tr>
<td>Training</td>
<td>-0.129</td>
<td>-0.102</td>
<td></td>
<td>0.958</td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td></td>
<td>0.163</td>
<td>0.148</td>
<td></td>
<td>0.894</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.212</td>
<td>0.539</td>
<td>0.669</td>
<td>0.782</td>
<td>0.872</td>
</tr>
</tbody>
</table>

Table 39: HR factor loadings
After calculating the weighted factors and their averages the URL’s above the average weighted factors are documented in 6 different spreadsheets. Appendix 6 shows the URL’s for each factor for the HR business unit name. Table 40 shows the summary of the factor analysis results.

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 Employee Promotion</td>
<td>&gt;6.87</td>
<td>7</td>
</tr>
<tr>
<td>Factor 2 Career Development</td>
<td>&gt;-9.48</td>
<td>8</td>
</tr>
<tr>
<td>Factor 3 Recruitment and Performance Reviews</td>
<td>&gt;-0.87</td>
<td>5</td>
</tr>
<tr>
<td>Factor 4 Hiring Process</td>
<td>&gt;28.77</td>
<td>6</td>
</tr>
<tr>
<td>Factor 5 Employee Transfer</td>
<td>&gt;11.09</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 40. HR factor analysis summary
4.10.3 HR Cluster Analysis

Since the Scree plot break occurs for the first three factors, cluster analysis can be performed for those three factors. This is done by first documenting the URL’s chosen for factors 1, 2 and 3 in the cluster analysis input file.

Cluster analysis is then performed on the three factors. The graph shows the entire URL’s associated to the three factors and merges the common URL’s. The plot is shown in graph 15.
From the plot it shows that all URL’s are clustered for those three factors. This is done to show the strength of each factor and which grouped companies correspond to which factor for the HR business unit. In this case factor two is the strongest followed by factor one and then factor three.
The summary of the results for the first three strong factors with keyword loadings of above 0.4 taken from table 26 is shown in table 41 followed by the summary of HR cluster analysis shown in table 27 and the HR pie chart that displays the percentages of the number of URL’s per cluster in graph 16.

<table>
<thead>
<tr>
<th>Factor 1 Employee Promotion</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotions</td>
<td>0.902</td>
</tr>
<tr>
<td>Employee Benefits</td>
<td>0.799</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.385</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 Career Development</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Development</td>
<td>0.991</td>
</tr>
<tr>
<td>Evaluation</td>
<td>0.943</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.539</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3 Recruitment and Performance Reviews</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraisal</td>
<td>0.87</td>
</tr>
<tr>
<td>Recruitment</td>
<td>0.706</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.669</td>
</tr>
</tbody>
</table>

Table 41: Summary of HR factor analysis
### Table 42: Summary of HR cluster analysis

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Providers of ....</th>
<th>Percentage of URL’s within the cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Employee Promotion</td>
<td>35%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Career Development</td>
<td>40%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Recruitment and Performance Reviews</td>
<td>25%</td>
</tr>
</tbody>
</table>

Graph 16: Cluster analysis HR pie chart
### 4.10.4 HR Factor Analysis Discussions

Table 43 summarizes the HR factor interpretation.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Employee Promotion</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering employee promotion software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Employee AND Benefits:</strong> With 0.799 Loading, this keyword can be interpreted as a service to manage employee benefits such as incentives</td>
<td>Tools that facilitate aligning company objectives with incentive plans, rewards, recognition bonuses and contests. Quantifiable metrics are identified and tracked to ensure the identified company objectives are always being achieved or exceeded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Example: Employee Recognition from Perks</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Promotions:</strong> With 0.902 Loading, this keyword can be interpreted to facilitate employee promotions such as rewards</td>
<td>Employee recognition, performance management and customer centric reward platform tools.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Supported, Highly rated and Unpopular</strong></td>
<td>Example: PerkPlus from Perks</td>
</tr>
<tr>
<td>2</td>
<td>Career Development</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering career development software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Career AND Development:</strong> With 0.958 Loading, this keyword can be interpreted as a service that develops the career skills and competencies planning tools.</td>
<td>Managing assessment of behavioral competencies. Tracking progress against the career development plan for both employees and managers. Identifying the requirements needed for career advancement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Evaluation:</strong> With 0.897 Loading, this keyword</td>
<td>Example: Online, On-Demand</td>
</tr>
<tr>
<td></td>
<td>Recruitment and Performance Reviews</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------</td>
<td>-------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td><strong>Appraisal</strong>: With 0.87 Loading, this keyword can be interpreted to review the employee and team members’ performance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Recruitment</strong>: With 0.706 Loading, this keyword can be interpreted as a service that facilitates the recruitment process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Unpopular, Free, Integrated and Supported</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** Online, On-Demand Focus from Fairsail

<table>
<thead>
<tr>
<th></th>
<th>Hiring Process</th>
<th>The following keyword was used by this factor with loading over 0.4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td><strong>Recruitment</strong>: With 0.595 Loading, this keyword can be interpreted as a service</td>
</tr>
</tbody>
</table>

**Example:** ImageNow from Perspective Software

<table>
<thead>
<tr>
<th></th>
<th>Development from Fairsail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tracking milestones and manage objective data for all team members.</td>
</tr>
<tr>
<td></td>
<td>Managing evaluations against goals and objectives for each team member.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> Performance Review and Appraisal from Fairsail</td>
</tr>
<tr>
<td></td>
<td>Automating the management of resumes, applications, offer letters, nondisclosure agreements and other documents associated with the recruitment process. Specifying job requirements profiles. Defining the selection criteria and interview process.</td>
</tr>
<tr>
<td></td>
<td><strong>Example:</strong> ImageNow from Perspective Software</td>
</tr>
<tr>
<td></td>
<td>Automating applicant tracking systems. Integrating with social networking websites and job boards.</td>
</tr>
<tr>
<td>Factor</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>5</td>
<td>Employee Transfer</td>
</tr>
</tbody>
</table>

Table 43: HR Factor Interpretation

From table 36 the average weighted factor loadings correspond to how relevant that factor’s URL’s are to the function it provides. Thus they are ranked as follows:

1. Factor 4 “Hiring Process” software there are 6 products relevant to this functionality

2. Second factor 5 “Employee Transfer” software there are 7 products relevant to this functionality since most of the employee transfer SaaS tools are part of the hiring process tools that’s why the products are high in relevance to the function they provide
3. Factor 1 “Employee Promotion” software there are 7 products relevant to this functionality

4. Fourth factor 3 “Recruitment and Performance Reviews” software there are 5 products not quite relevant to the functionality since performance reviews is a different function than actual recruitment

5. Factor 3 “Career Development” software does not have many relevant products.

4.10.5 HR Cluster Analysis Discussion

From the cluster analysis HR table 38 shows that each factor forms its own cluster. That is because each cluster provides a different functionality than the other and thus different SaaS applications. Examples of the top products for the first cluster according to keyword weight that provide employee promotions are:

1. PerkPlus from Perks

2. Human Capital Management from Fairsail

Examples of products for the second cluster according to keyword weight that provide career development services are:

1. Online, On-Demand Development from Fairsail

2. Online, On-Demand Focus from Fairsail

Examples of products for the third cluster according to keyword weight that provide recruitment and performance reviews services are:
1. **Recruiting** from Riptide

2. **ImageNow** from Perspective Software

3. **Recruiting** from Target Recruit

From the HR plot graph 15 it can be shown that most URL’s are a part of factor 2 followed by factor 1 and 3. Factor 1 and 3 share a lot URL’s such as Target Recruit, Perks and Fairsail since employee promotion, performance reviews and recruitment all tie in together.

**4.10.6 HR Managerial Insights**

- Most HR keywords go hand-in-hand and are related such as employee appraisal with evaluation; employee benefits with promotions and recruitment with employee training and transfer.

- The cluster percentages are almost the same since the HR products are equally divided into the three factors.

- Most HR SaaS products are low rated or unpopular that is because the HR SaaS solutions are very new and therefore the applications themselves are not that intuitive with lots of room for improvement.

- Fairsail is the only common SaaS vendor between the three clusters, employee promotions, career development, recruitment and performance reviews since it offers separate products for each function.
4.11 All business units Results

4.11.1 All business units Data Analysis

After completing all the business unit results separately, all business unit keywords and URL’s are combined. Then factor and cluster analysis are performed. This is done to compare the results of all business units together versus each business unit separately.

From the entire list of all the keywords combined table 44 shows the ones selected since many were dropped because they were duplicate keywords or had no keyword hits:

<table>
<thead>
<tr>
<th>All Business Units</th>
<th>Keywords selected</th>
<th>Advertising</th>
<th>Budgeting</th>
<th>Campaigns</th>
<th>Demand AND generation</th>
<th>Distribution</th>
<th>Internet AND marketing</th>
<th>Lead AND nurturing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lead AND scoring</td>
<td>Media</td>
<td>Managing AND leads</td>
<td>Market AND Segmentat ion</td>
<td>Promotion</td>
<td>PR</td>
<td>Publicity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Search AND engine AND marketing</td>
<td>Social AND media AND marketing</td>
<td>Sponsors hip</td>
<td>Sales AND pipeline</td>
<td>Telemark eting</td>
<td>Competitio n</td>
<td>Product AND manageme nt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backups</td>
<td>Conversion</td>
<td>Data AND entry</td>
<td>Data and migration</td>
<td>Data and mining</td>
<td>Data and replication</td>
<td>Statistical AND analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data AND storage</td>
<td>Virus AND tracking</td>
<td>Data AND warehousing</td>
<td>Audits</td>
<td>Bonds</td>
<td>Credit</td>
<td>Inventory</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investmen t</td>
<td>Payroll</td>
<td>Sharehol der</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keywords dropped</td>
<td>Sales tracking</td>
<td>Sales territory</td>
<td>Sales forecasting</td>
<td>Sales contract</td>
<td>E-signature</td>
<td>Quote generation</td>
<td>Quote tracking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing tasks</td>
<td>Analyzing events</td>
<td>Door-to-Door sales tracking</td>
<td>Business-to-Business sales tracking</td>
<td>Sales lead scoring</td>
<td>Funnel scorecard</td>
<td>Sales planning</td>
<td></td>
</tr>
<tr>
<td>Sales process information</td>
<td>Keep track of customers</td>
<td>Sales reporting</td>
<td>Market research</td>
<td>Events organization</td>
<td>Cause marketing</td>
<td>Demand generation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------------------</td>
<td>----------------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referral marketing</td>
<td>Advertising techniques and tracking</td>
<td>Product definition</td>
<td>Product planning</td>
<td>Product promotion</td>
<td>Catalogue</td>
<td>Product documentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gathering market requirements</td>
<td>Product lifecycle requirements</td>
<td>E-mail integration</td>
<td>Licensees</td>
<td>Project initiation</td>
<td>Monitoring</td>
<td>Project completion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project risks</td>
<td>Administration</td>
<td>Termination</td>
<td>Flagging</td>
<td>Project design</td>
<td>Contract</td>
<td>Resources allocation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholder analysis</td>
<td>Plan contracting</td>
<td>Source selection</td>
<td>Information distribution</td>
<td>Team development</td>
<td>Document sharing</td>
<td>Data validation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data transmission</td>
<td>Content tracker</td>
<td>Profanity tracker</td>
<td>Data tabulation</td>
<td>Equities</td>
<td>Travel</td>
<td>Vacation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working capital</td>
<td>Treasury</td>
<td>Invoice</td>
<td>Accounts payable</td>
<td>Billing and shipping</td>
<td>Cash flow</td>
<td>Financial reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statutory holidays</td>
<td>Compensation</td>
<td>Tax administration</td>
<td>Cash holding</td>
<td>Contract setup</td>
<td>Public debt</td>
<td>Tax reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recruitment</td>
<td>Training</td>
<td>Evaluation</td>
<td>Promotion</td>
<td>Transfer</td>
<td>Record keeping</td>
<td>Career development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appraisal</td>
<td>Employee benefits</td>
<td>Competency mapping</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 44: All Business Units keywords

After inputting the 53 keywords and 240 URL's onto the keyword search tool, the plot is shown in graph 17.
Here is the Scree plot:

Graph 17 All business units Scree plot
From the plot we can see there are up to 14 factors we can use that have an Eigenvalue higher than 1.0. However, the Scree plot break happens after six factors. This means that six strong factors resulted from PCA.

4.11.2 All Business units Factor Analysis

Table 45 shows the data validation test results before going into factor analysis:

<table>
<thead>
<tr>
<th>Metric</th>
<th>Limit</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy</td>
<td>&gt; 0.5</td>
<td>0.982</td>
</tr>
<tr>
<td>Bartlett’s test of significance</td>
<td>&lt;0.05</td>
<td>2.2e-16</td>
</tr>
<tr>
<td>Cumulative variance</td>
<td>&gt; 0.3</td>
<td>0.377</td>
</tr>
</tbody>
</table>

Table 45: All business units’ data validation

Table 46 shows the factor loadings for the 14 factors resulting from the factor analysis:

<table>
<thead>
<tr>
<th>Keywords</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>F9</th>
<th>F10</th>
<th>F11</th>
<th>F12</th>
<th>F13</th>
<th>F14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>-0.122</td>
<td>0.241</td>
<td>0.143</td>
<td></td>
<td>0.176</td>
<td>0.127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audits</td>
<td></td>
<td>0.457</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation</td>
<td>0.165</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.35</td>
<td>0.906</td>
<td>0.194</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.246</td>
</tr>
<tr>
<td>Budgeting</td>
<td>-0.103</td>
<td>0.204</td>
<td>-0.107</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.119</td>
</tr>
<tr>
<td>Call Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.972</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.178</td>
</tr>
<tr>
<td>Campaign</td>
<td>0.627</td>
<td>-</td>
<td>-</td>
<td>-0.117</td>
<td>0.187</td>
<td>-</td>
<td>-0.114</td>
<td>-0.126</td>
<td>0.492</td>
<td>0.284</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
<td>Value 5</td>
<td>Value 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
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<td>---------</td>
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<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>0.265</td>
<td>0.179</td>
<td>0.127</td>
<td>0.219</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competition</td>
<td>-0.114</td>
<td>-0.194</td>
<td>-0.134</td>
<td>-0.102</td>
<td>0.297</td>
<td>-0.883</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract Management</td>
<td>0.227</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion</td>
<td></td>
<td></td>
<td>0.317</td>
<td>0.474</td>
<td>0.101</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credit</td>
<td>0.969</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.223</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Service</td>
<td>0.308</td>
<td>0.363</td>
<td></td>
<td></td>
<td></td>
<td>0.117</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Entry</td>
<td></td>
<td></td>
<td>0.873</td>
<td>0.146</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Migration</td>
<td></td>
<td></td>
<td>0.923</td>
<td>0.196</td>
<td>0.155</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliverables</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
<td>0.134</td>
<td>0.496</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand Generation</td>
<td>0.933</td>
<td></td>
<td></td>
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<td>Virus</td>
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</tbody>
</table>
Table 46. All business units factor loadings

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Average weighted factor loadings</th>
<th>Number of URL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1 Marketing Automation</strong></td>
<td>Campaigns, demand generation, Internet marketing, lead nurturing, lead scoring, managing leads and PR</td>
<td>&gt; 18.39</td>
</tr>
<tr>
<td><strong>Factor 2 Project Management</strong></td>
<td>Deliverables, Equipment, Project planning and execution</td>
<td>&gt; 0.094</td>
</tr>
<tr>
<td><strong>Factor 3 Support Operations</strong></td>
<td>Supported IT, automation, conversion, customer service, reporting, ticket, SLA, community, knowledge</td>
<td>&gt; 15.89</td>
</tr>
<tr>
<td>Factor 4 Finance Operations</td>
<td>Audits, bonds, credit, investment, inventory, payroll and SLA</td>
<td>&gt; 0.33</td>
</tr>
<tr>
<td>Factor 5 Permission Marketing</td>
<td>Internet marketing, search engine marketing, social media marketing, market segmentation, PR, media and budgeting</td>
<td>&gt; 1.52</td>
</tr>
<tr>
<td>Factor 6 Call Center Operations</td>
<td>Customer service, call center, Helpdesk, reporting, IT outsourcing</td>
<td>&gt; 7.66</td>
</tr>
<tr>
<td>Factor 7 Marketing Media Operations</td>
<td>Advertising, media, PR, sponsorship, campaigns, social media marketing, search engine marketing, demand generation, lead nurturing and scoring</td>
<td>&gt; 20.53</td>
</tr>
<tr>
<td>Factor 8 IT Operations</td>
<td>Backups, replication, storage, virus checking, storage and statistical analysis</td>
<td>&gt; -0.38</td>
</tr>
<tr>
<td>Factor 9 Business Services</td>
<td>Storage, data integration and migration</td>
<td>&gt; -0.3</td>
</tr>
<tr>
<td>Factor 10</td>
<td>Data Management</td>
<td>Backups, conversion, statistical analysis and data mining, storage, and warehousing</td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Factor 11</td>
<td>Departmental Integration</td>
<td>Advertising, campaigns, demand generation, internet marketing, promotions, managing lead nurturing and scoring, market segmentation, media, search engine marketing, competition, distribution, call center, community, customer service, reporting, deliverables, equipment, project planning and execution, product management, backups, conversion, data entry, IT, storage, virus, credit and promotion</td>
</tr>
<tr>
<td>Factor 12</td>
<td>Marketing Campaigning</td>
<td>Advertising, campaigns, budgeting, market segmentation, distribution, promotion</td>
</tr>
<tr>
<td>Factor 13</td>
<td>Lead Management</td>
<td>Internet marketing, publicity, managing and scoring leads</td>
</tr>
</tbody>
</table>
### 4.11.3 All business units’ Cluster Analysis

Since the Scree plot break occurs for the first six factors, cluster analysis can be performed for those six factors. This is done by first documenting the URL’s chosen for factors 1, 2, 3, 4, 5 and 6 in the cluster analysis input file.

The Tkplot Fruchterman Reigold plot shows a detailed view of the entire URL’s associated to the six factors and merges the common URL’s. The plot is shown in graph 18.
From the plot it shows that four clusters are formed for those six factors. This is done to show the strength of each factor and which grouped companies correspond to which factor for all business units. In this case factor three is the strongest followed by factor one, then factor four then factor four and then factor two.

The summary of the results for the first six strong factors with keyword loadings of above 0.4 taken from table 31 is shown in table 48 followed by the summary of all business units’ cluster analysis shown in table 49 and all business units’ pie chart that displays the percentages of the number of URL’s per cluster in graph 19.
<table>
<thead>
<tr>
<th>Factor 1 Marketing Automation</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Generation</td>
<td>0.933</td>
</tr>
<tr>
<td>Lead Scoring</td>
<td>0.908</td>
</tr>
<tr>
<td>Lead Nurturing</td>
<td>0.894</td>
</tr>
<tr>
<td>Campaigns</td>
<td>0.627</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.045</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2 Project Management</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Execution</td>
<td>0.98</td>
</tr>
<tr>
<td>Deliverables</td>
<td>0.851</td>
</tr>
<tr>
<td>Project Planning</td>
<td>0.542</td>
</tr>
<tr>
<td>Equipment</td>
<td>0.467</td>
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<tr>
<td>Cumulative Variance</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Factor 3 Administration Support Operations</th>
<th>Loading</th>
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</thead>
<tbody>
<tr>
<td>IT</td>
<td>0.739</td>
</tr>
<tr>
<td>Community</td>
<td>0.588</td>
</tr>
<tr>
<td>Reporting</td>
<td>0.569</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>0.553</td>
</tr>
<tr>
<td>Cumulative Variance</td>
<td>0.108</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4 Finance Operations</th>
<th>Loading</th>
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</thead>
<tbody>
<tr>
<td>Credit</td>
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<tr>
<td>Audits</td>
<td>0.457</td>
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<tr>
<td>Cumulative Variance</td>
<td>0.139</td>
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</table>
### Factor 5 Permission Marketing

<table>
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<tr>
<th>Service</th>
<th>Cumulative Variance</th>
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<tbody>
<tr>
<td>Search Engine Marketing</td>
<td>0.972</td>
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<tr>
<td>Social Media Marketing</td>
<td>0.807</td>
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<tr>
<td><strong>Cumulative Variance</strong></td>
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### Factor 6 Call Center Operations

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<tr>
<th>Service</th>
<th>Cumulative Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Center</td>
<td>0.972</td>
</tr>
<tr>
<td>Outsourcing</td>
<td>0.648</td>
</tr>
<tr>
<td>Helpdesk</td>
<td>0.428</td>
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<tr>
<td><strong>Cumulative Variance</strong></td>
<td>0.196</td>
</tr>
</tbody>
</table>

Table 48: Summary of all business units’ factor analysis

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Providers of ....</th>
<th>Percentage of URL’s within the cluster</th>
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</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Marketing Automation Software</td>
<td>34.82%</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Project Management Software</td>
<td>4.46%</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Support Services Software</td>
<td>41.07%</td>
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<tr>
<td>Cluster 4</td>
<td>Finance Software</td>
<td>19.64%</td>
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</tbody>
</table>

Table 49: Summary of all business units’ cluster analysis
### 4.11.4 All Business Units Analysis Discussions

Table 50 summarizes all business units factor interpretation.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Name</th>
<th>Keywords</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marketing Automation</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering marketing automation software provide the following type of solution:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Campaigns:</strong> With 0.627 Loading, this keyword can be interpreted as a</td>
<td>• E-mail campaigns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>service for the marketing department to create campaigns</td>
<td>• Stay in touch campaigns for all prospects that are not immediately ready to engage with sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>• Develop automated nurturing campaigns</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Demand AND Generation:</strong> With 0.933</td>
<td>• Maximizing lead generation by developing lead lifecycles</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Campaigns that ensures</td>
</tr>
</tbody>
</table>
Loading, this keyword can be interpreted as a service that drives awareness and interest in a company’s product or services.

The following keyword was used by this factor with loading over 0.4:

**Lead AND Nurturing:**
With 0.894 Loading, this keyword can be interpreted to ensure leads are properly nurtured and maintained.

The following keyword was used by this factor with loading over 0.4:

**Lead AND Scoring:**
With 0.908 Loading, this keyword can be interpreted to ensure leads are properly scored and ranked.

**Popular, Highly Rated, Integrated and Supported**

leads will never grow stagnant or lost

**Example:** Campaign Management from Eloqua

Demand generation tools such as campaign management, lead management, marketing analysis, and data management.

**Example:** Demand Generation from Marketo

- Lead nurturing which include Building relationships with qualified prospects that are not yet ready to speak with sales
- Trigger targeted messages to prospects based on specific behaviors or profile updates
- Automate multi-step marketing programs that build relationships with qualified prospects over time.

**Example:** Lead Nurturing from Marketo

Lead scoring which include:

- Automatically qualifying leads and measuring their interest and engagement
- Track online activity to measure buying interest and sales-readiness
- Decrease scores over time based on inactivity.

**Example:** Lead Scoring from
<table>
<thead>
<tr>
<th>2</th>
<th>Project Management</th>
<th></th>
<th>Marketo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td>Companies that are offering project management software provide the following type of solution:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Deliverables:</strong> With 0.851 Loading, this keyword can be interpreted as a service that helps in executing project deliverables</td>
<td>Processes logical project management deliverables. Provides executives, managers and project team members with the necessary tools and processes to plan and execute their deliverables in a manner that makes most sense to maximize their resources and get the right work done.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Equipment AND Allocation:</strong> With 0.467 Loading, this keyword can be interpreted as a service that allocates the right resources such as equipment to the most appropriate project</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Project Planning:</strong> With 0.542 Loading, this keyword can be interpreted as a service that facilitates in project planning</td>
<td><strong>Example:</strong> Fulfillment Manager from @task</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Project Execution:</strong> With 0.98 Loading, this keyword can be interpreted as a service that facilitates in project execution</td>
<td>Quickly finds which software equipment such as laptops, servers and PDA’s are available to be assigned to a task and a team member and evaluate substitutions to optimize the organization’s utilization.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Supported and Highly Rated</strong></td>
<td><strong>Example:</strong> Resource Management from @task</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Executing projects including project status updates; tracking and solving on-going issues; completing tasks and showing the estimated and completed budget and resources</td>
<td>Defining objectives, tasks, metrics, time, budget and resources to complete the project. Create and automate project workspaces and plans to facilitate project execution</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Example:</strong> Project Management Module from Projector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Administration Support Operations</td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community: With 0.588 Loading, this keyword can be interpreted as a service that provides an interactive social software for all support cases and users.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IT: With 0.739 Loading, this keyword can be interpreted as a service that helps IT with maintaining the administration of support operations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knowledge AND Base: With 0.553 Loading, this keyword can be interpreted to manage the knowledge base.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reporting: With 0.569 Loading, this keyword can be interpreted to ensure reporting on support metrics is done properly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Supported and Highly rated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** DreamTeam Project Management from Dreamfactory

Companies that are offering administration support operations software provide the following type of solution:

Developing enterprise communication and collaboration software.

Connecting customers across disjointed channels to reduce support costs.

**Example:** Supportal from Jive Software

Providing easily customizable widgets, reports, fields and page layouts; security privileges setup; automation workflows and E-mail automation and integration.

Creates a knowledge base according to all the cases created and their responses, answers and solutions.

Automate the knowledge base so that when a case is created the knowledge base tool would identify the question and provide suggested answers right away without the need of an agent. Shortcuts can be created to answer commonly asked questions. Agents can search the knowledge base by key words and find shortcuts to quickly answer email and web chat interactions.

**Example:** IntelliResponse from ATG

Creating reports and dashboards.
| 4 | Finance Operations | The following keyword was used by this factor with loading over 0.4:

**Audits:** With 0.457 Loading, this keyword can be interpreted to ensure audits running properly

**Credit:** With 0.969 Loading, this keyword can be interpreted to manage credit

**Supported and Integrated** | Companies that are offering finance operations software provide the following type of solution:

- Full audit history and compliance tracking. Gives pricing and billing processes the transparency needed to prepare for a possible sale or public offering.

**Example:** Z-Billing 2.0 from Zuora

Process and verify credit card payments. Manage payment orders, invoices and quotes. Manage and obtain transaction details.

**Example:** Managed Payment 2.0 from eWay |

| 5 | Permission Marketing | The following keyword was used by this factor with loading over 0.4:

**Search AND Engine AND Marketing:** With 0.972 Loading, this keyword can be interpreted to promote

for support analytics including virtualization, interactive and ad-hoc reports. Scheduled reports. Report design. Business logic embedding including formulas and workflows. Support metrics include initial response time, case origin, severity, case reason, date cases opened and closed and status of case.

**Example:** Style Intelligence - Reporting & Dashboard App from InetSoftware | Companies that are offering permission marketing software provide the following type of solution:

Creating search engine marketing campaigns; creating associated site landing page content that are integrated with |
websites by increasing their visibility in search engine result pages

**Social AND Media AND Marketing:** With 0.807 Loading, this keyword can be interpreted to allow people to build social and business connections, share information and collaborate on projects online

**Supported**

<table>
<thead>
<tr>
<th>6</th>
<th>Call Center Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
</tr>
<tr>
<td></td>
<td><strong>Call AND Center:</strong> With 0.972 Loading, this keyword can be interpreted as a service to facilitate the management of call centers</td>
</tr>
<tr>
<td></td>
<td>The following keyword was used by this factor with loading over 0.4:</td>
</tr>
<tr>
<td></td>
<td><strong>Outsourcing:</strong> With 0.648 Loading, this keyword can be interpreted to facilitate outsourcing operations and solutions</td>
</tr>
<tr>
<td></td>
<td><strong>Helpdesk:</strong> With 0.428 Loading, this keyword can be interpreted to provide helpdesk solutions for not just support but also HR and other media; and Making sure to deliver site visitors to precisely what they are searching for.</td>
</tr>
</tbody>
</table>

**Example:** PageVester - Landing Pages Creation from Acquisio

Turn social media data into value by using reports, dashboards and lead automation capabilities from sources such as Facebook, LinkedIn, blogs and Twitter.

**Example:** SEO for SalesForce from DemandResults

Companies that are offering call center operations software provide the following type of solution:

Real-time flow of interactions between CRM applications and call center solutions. This includes agent-desktop and routing of interactions.

Facilitate real-time information flow via interactive voice response systems, E-mail servers and web chat applications. E-mail management systems that facilitate e-mail routing, e-mail content analysis and response management. Ensure that the right customer reaches the right agent at the right time.

Outsourcing operations such as staffing solutions, CRM engagements, professional services and customer self-services

**Example:** AMC Multi-Channel
<table>
<thead>
<tr>
<th></th>
<th>Support and Integrated</th>
<th>Integration Server from AMC Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Integrated Marketing Communications</td>
<td>Setting customers to the right agents right away. Manage phone, E-mail and chat channels all in one application. Track all customer interactions.</td>
</tr>
<tr>
<td></td>
<td>Media: With 0.871 Loading, this keyword can be interpreted to take advantage of the media for marketing purposes</td>
<td>Companies that are offering integrated marketing communications software provide the following type of solution: Creating media products, applications and campaigns. Track social media conversations and web traffic</td>
</tr>
<tr>
<td></td>
<td>Public AND Relations: With 0.773 Loading, this keyword can be interpreted to maintain the public image of the business</td>
<td>Example: gURL from Genius</td>
</tr>
<tr>
<td></td>
<td>Popular and Highly rated</td>
<td>Protect the organization’s image and ensure compliance across all channels to prevent PR issues</td>
</tr>
<tr>
<td></td>
<td>Example: Gryphon from PrivacyAdvisor</td>
<td></td>
</tr>
</tbody>
</table>

<p>| 8 | IT Operations | Companies that are offering IT operations software provide the following type of solution: Automating and facilitating data entry into the CRM system as easily as possible using various SaaS tools |
|   | Data AND Entry: With 0.873 Loading, this keyword can be interpreted to manage and automate data entry | Example: Mass Effect from DemandTools |
|   | Data AND Migration: With 0.923 Loading, this keyword can be interpreted to manage data migration from one | Gathering all data including fields and the different relationships and configurations between all |</p>
<table>
<thead>
<tr>
<th>9</th>
<th>Business Services</th>
<th>No factor loadings over 0.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Data Management</td>
<td>The following keyword was used by this factor with loading over 0.4: <strong>Data AND Backups:</strong> With 0.906 Loading, this keyword can be interpreted to ensure data is backed up properly. <strong>Data AND Conversion:</strong> With 0.474 Loading, this keyword can be interpreted to ensure data is converted properly to be supported.</td>
</tr>
<tr>
<td></td>
<td>Departmental Integration</td>
<td>Marketing Campaigns</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>11</td>
<td>Involves all business units keywords and functionality integrated together</td>
<td>No factor loadings over 0.4</td>
</tr>
<tr>
<td></td>
<td>Data AND Warehousing: With 0.599 Loading, this keyword can be interpreted to manage the various stages in data warehousing. <strong>Integrated and Free:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Data file formats at the data input stage and then storing the output data in a number of different formats. <strong>Example:</strong> IT Operations from Conformity. Help in various data functionality such as cleaning, retrieving, extracting transforming, cataloging and loading data and managing the data dictionary. <strong>Example:</strong> Visual Business Intelligence from ZoomInfo.</td>
<td></td>
</tr>
</tbody>
</table>
From table 42 the average weighted factor loadings correspond to how relevant that factor’s URL’s are to the function it provides. Thus they are ranked as follows:

1. Factor 7 “Integrated Marketing Communications” software there are 100 products relevant to this functionality
2. Factor 1 “Marketing Automation” software there are 26 products relevant to this functionality
3. Factor 3 “Administration Support Operations” software there are 36 products relevant to this functionality
4. Factor 6 “Call Center Operations” software there are 36 products relevant to this functionality
5. Factor 12 “Marketing Campaigns” software there are 48 products relevant to this functionality
6. Factor 5 “Permission Marketing” software there are 20 products relevant to this functionality
7. Factor 13 “Marketing Publicity” software there are 16 products relevant to this functionality
8. Factor 4 “Finance Operations” software there are 36 products relevant to this functionality
9. Factor 2 “Project Management” software there are 5 products relevant to this functionality

10. Factor 14 “Project Execution” software there are 4 products relevant to this functionality


4.11.5 All Business Units Cluster Analysis Discussion

From the cluster analysis all business units’ results table 44 shows that marketing automation and permission marketing can be combined into one cluster since SaaS tools offer same products for both functionalities. Permission marketing is the initial phase of marketing automation. Therefore it is safe to say the marketing automation software forms the first cluster. The second cluster is project management software since it provides a different functionality than the other factors specifically for project management purposes. The third cluster combines both administration support operations and call center operations into one cluster since SaaS tools offer same products for both functionalities. Call center operations functions need to always be administrated by administration support operations functions. Therefore it is safe to say the support services software forms the third cluster. Finally, the fourth cluster is finance software since it provides a different functionality than the other factors. Examples of the top
products for the first cluster according to keyword weight that provide marketing automation software services are:

1. **Marketing Automation, Lead Management and Email Marketing** from Marketo
2. **Marketing Automation, Demand Generation, Email Marketing Solution** from Genius Inc.
3. **Eloqua Express** from Eloqua
4. **SEO for SalesForce** from DemandResults

Examples of products for the second cluster according to keyword weight that provide project management software services are:

1. **DreamTeam Project Management** from Dreamfactory
2. **Fulfillment Manager** from @task
3. **Projector Professional Services Automation** from Projector
4. **Resource Management** from @task

Examples of products for the third cluster according to keyword weight that provide support software services are:

1. **Supportal** from Jive Software
2. **AMC Multi-Channel Integration Server** from AMC Technology
3. **Style Intelligence - Reporting & Dashboard App** from InetSoftware
4. **OnDemand Call Center Platform** from LiveOps
Examples of products for the fourth cluster according to keyword weight that provide finance operations services are:

1. **Z-Billing 2.0** from Zuora
2. **Managed Payment 2.0** from eWay
3. **Intacct Financial Management** from InetSoftware
4. **Expensify** from Expensify

From the all business units plot graph 18 it can be shown that most URL’s are a part of cluster (factors 3 and 6) followed by cluster 1 (factors 1 and 5) followed by cluster 4 and finally a few URL’s are part of cluster 2. There are no shared URL’s between any of the clusters since they all provide different solutions. This is also demonstrated on the cluster pie chart graph 35. The reason for that is most of the Force.com SaaS tools provide solutions for marketing and support departments. While Finance operations are usually handled in-house or through separate financial tools not integrated with SalesForce. Finally there are not many Force.com SaaS tools out there for project management yet but it is growing in the future.

**4.11.6 All Business Units Managerial Insights**

- Marketing automation factor 1 for the marketing result analysis has the same exact keywords, SaaS solutions and non-functional criteria (popular, highly rated, supported and integrated) as factor 1 “Marketing Automation” for all business units. Also, permission marketing factor 4 for marketing has the same exact keywords and SaaS solutions as factor 5 “Permission Marketing” for all business units.
units. Also, lead management factor 5 in marketing has the same exact keywords and SaaS solutions as factor 13 “Lead Management” for all business units. This shows how strong the analysis for the marketing business unit separately is.

- The administration support services factor does not have specific SaaS products that support the IT functionality. Since IT functionality is general and it is part of IT’s job to install and maintain the SaaS tools. However, the ease of use, configuration and administration of SaaS tools is what’s beneficial for IT.

- The difference between the administration support operations factor discussed in this section and the support services operations discussed in the Support and Maintenance section is that administration support deals more with IT and admin functionalities such as customizing fields widgets, reports, fields; security privileges setup; maintaining the knowledge base and E-mail automation and integration. While as support services concentrates on case management and SLA’s.

- Factor 9 “Business Services” does not have any strong keyword loadings since it is already part of IT operations and is a business unit that manages all the SaaS tools for all other business units.

- Factor 11 “Marketing Campaigns” does not have any strong keywords loadings since it is already part of marketing automation and lead management.

- Factor 14 “Project Execution” does not have any strong keyword loadings since it is already part of project management services.

- For factor 10 “Data Management” there aren’t many data warehousing products out there. Simply because business intelligence software is separate and
competing with SalesForce example Microsoft CRM, Onyx, IBM and Crystal reports. That is why most data management SaaS tools integrated with SalesForce is free.

- Factor 11 “Departmental Integration” combines all departmental functions. This shows what SaaS products can be integrated with others in different business units.

- Marketing, Support and Project management SaaS service providers are highly rated and popular.

- The departmental integration factor is low rated since it is very difficult to have one SaaS product that offers all departmental solutions and if it did it won’t be powerful as it won’t focus on one function fully.

- Clusters are formed according to the different business units. There are no URL’s shared between any cluster.

- Marketing and Support business units have the most URL’s.

- There is no HR factor since there are a very few number of products and keywords provided.

The reason all business units were analyzed together after analyzing each business unit separately, was due to the inaccuracy and inadequacy of the results of a few business units.

This included sales which only had a maximum of one keyword loading greater than 0.4 per factor for all sales factors. Also the Scree plot gave inaccurate results, showing four strong factors while the third factor did not have any factor loadings greater than 0.4. Sales provided a small number of products for each factor and only
one cluster was formed. Product management’s number of keyword loadings greater than 0.4 were insufficient and also provided a small number of products for each factor if any. Thus there was not enough information to discuss the results completely. Project management did not provide any results due to the very low number of products (URL’s) available. IT and finance had a KMO less than 0.5 therefore results would not have been accurate. Finally, HR only problem was that it provided a small number of products for factor. However, the number of keyword loadings greater than 0.4 per factor was sufficient and different clusters were formed that had evenly distributed percentages.

Both the marketing and the support and maintenance business units’ results were sufficient. Since both business units had an adequate number of keywords greater than 0.4 and a large number of products per factor. They also formed different clusters with distributed percentages.
CONCLUSION, LIMITATIONS AND FUTURE WORK

This chapter is divided into three sections. Section 6.1 covers the conclusions of this thesis. Section 6.2 presents the thesis future research opportunities and Section 6.3 concludes with the limitations and challenges of this research.

6.1 Conclusion

In conclusion the thesis contributed to saving time for SaaS consumers to research and observe existing features by researching all Force.com AppExchange SaaS vendors categorized by functionality and then performing factor analysis between the functional keywords and SaaS URL’s. The results helped in making sense of the SaaS concept to the parties involved. The clusters outcomes were as follows ranked by popularity (number of URL’s):

1. Support services software
2. Marketing automation software
3. Finance software
4. Project management software

The reason support services and marketing automation software are high in popularity is that SaaS vendors have been offering those kind of solutions for some time now. While as finance and project management software solutions are fairly new Force.com SaaS solutions and thus they are solutions that need more future work and research.
6.2 Future Research Opportunities

The following are the future research opportunities:

1. Research future Force.com SaaS opportunities for business units that have not been exploited yet such as research and development, quality assurance, legal and test.

2. Perform a study on how to improve current SaaS vendor's solutions for business units that are not popular and are still in the initial phase of SaaS implementation such as product management, project management, HR and finance.

3. Develop case studies of the companies in each cluster to verify that firm's market offerings are accurately presented.

4. Compare Force.com vendors with other CRM SaaS vendors such as Oracle and Microsoft CRM.

6.3 Limitations

The following limitation was encountered as a result of performing this study:

- The interpretation of factors, developing definitions and names for factors and clusters are subjective and can be influenced by the researcher's prior knowledge and literature review.
REFERENCES


Darlington, R. (2007). Factor Analysis. Available at:


Pettey, C. & Steven, H. Gartner. (2009). Survey Shows Many Users are Underwhelmed by Their Experiences of SaaS. Gartner. Available at:


APPENDICES

Appendix- 1: List of companies

The following list is the list of 118 companies according to the sales business unit that have been used in this study (the URL’s of companies):

http://www.echosign.com/
http://www.bigmachines.com/

http://www.sesamesoftware.com/
http://www.arrowpointe.com/
http://www.docusign.com/
http://www.drawloop.com/
http://www.xactlycorp.com/
http://www.funnelsource.com/
http://www.sharemethods.com/
http://www.demandbase.com/
http://www.fpx.com/
http://www.dreamfactory.com/
http://www.visualinsight.com/
http://www.insidesales.com/
http://www.assuresign.com/
http://www.boulderlogic.com/
http://www.sertifi.com/
http://www.shadetreetechnology.com/
http://www.marketsync.com/
http://www.pipelinemanager.com/
http://www.marketo.com/
http://www.zoominfo.com/
http://www.santcorp.com/
http://www.firmcloud.com/
http://www.salesways.com/
http://www.pivotlink.com/

http://www.mastermindsoftware.com/
http://www.kugamon.com/
http://www.scoutsft.com/
http://www.thetasgroup.com/
http://www.activalive.com/
http://www.ninthwavesolutions.com/
The following list is the list of 107 companies according to the marketing business unit that have been used in this study (the URL's of companies):

http://www.insideview.com/

http://www.genius.com/
http://www.clicktools.com/

http://www.arrowpointe.com/
http://www.pardot.com/
http://presentation.brainshark.com/
http://www.drawloop.com/

http://www.validar.com/

http://www.makesbridge.com/

http://www.sharemethods.com/

http://www.demandbase.com/
http://www.predictiveresponse.com/

http://www.postcodeanywhere.co.uk/
http://www.eloqua.com/

http://www.silverpop.com/
http://www.enzigma.com/
http://www.marketsync.com/

http://www.boulderlogic.com/

http://www.zoominfo.com/
http://www.santcorp.com/

http://www.loopfuse.com/

http://www.demandresults.com/

http://www.insitusoftware.com/
http://www.firmcloud.com/

http://www.mastermindsoftware.com/
http://www.etrigue.com/

http://www.orchestracms.com/
http://solutions.liveperson.com/

http://www.invisiblecrm.com/

http://www.3marketeers.com/

http://www.treehousei.com/
http://www.steelbrick.com/
http://www.artesiansolutions.com/
http://www.lasso2go.com/

http://www.springcm.com/
http://www.maasimpact.com/

http://www.boldchat.com/
http://www.provenworks.com/

http://www.rooseconsulting.com/
http://www.input.com/default.cfm

http://www.emailvision.com/
http://www.stratascope.com/

http://www.genoo.com/
http://www.astadia.com/

http://www.4syndication.com/

http://www.infowelders.com/
http://www.fairsail.com/
http://www.istrategicpartners.com/

http://www.engagementsystems.com/
http://www.point-of-reference.com/
http://www.savogroup.com/
http://www.sakonent.com/
http://www.boomi.com/
http://www.cloud-craze.com/
http://www.walkerinfo.com/

http://www.firstspike.com/

http://www.actonsoftware.com/

http://www.conduitonline.com/
The following list is the list of 44 companies according to the product management business unit that have been used in this study (the URL’s of companies):

http://www.sesamesoftware.com/
http://www.arrowpointe.com/

http://www.makesbridge.com/
http://funnelsource.com/

http://www.dreamfactory.com/

http://www.visualinsight.com/

http://www.demandresults.com/
http://www.birst.com/index.shtml

https://www.cloud9analytics.com/

http://www.sendside.net/

http://www.accorto.com/
http://www.in2clouds.com/
http://www.intellectinternational.net/
http://www.rumbleware.com/
http://www.gooddata.com/
http://www.ahasoftware.com/
http://www.forcemeister.com/
http://www.roambi.com/
http://level5biz.com/default.aspx

http://www.crystalreports.com/
http://salesoptimizer.force.com/
http://www.demandbase.com/
http://www.deciphertech.com/
http://www.salesfusion.com/

http://www.right90.com/
The following list is the list of 57 companies according to the support and maintenance business unit that have been used in this study (the URL’s of companies):

http://www.ihance.com/
http://www.clicktools.com/sfdc/
http://www.zenkraft.com/
http://www.postcodeanywhere.co.uk/
http://www3.formassembly.com/pricing.php
http://www.contactual.com/
http://www.exactship.com/
http://www.saaspoint.com/
http://www.snapabug.com/
http://www.amctechnology.com/
http://www.inetsoft.com/
http://www.bmt-business.co.il/cms/
http://www.ortoomail.com/

The following list is the list of 9 companies according to the project management business unit that have been used in this study (the URL’s of companies):

http://dreamfactory.com/
http://www.arrowpointe.com/
http://www.saleslogistix.com/
http://www.saaspoint.com/
http://www.attask.com/
http://www.projectorpsa.com/
http://level5biz.com/default.aspx
http://www.open.collab.net/
http://www.accorto.com/
http://www.mkpartners.com/

The following list is the list of 26 companies according to the IT business unit that have been used in this study (the URL’s of companies):

http://dreamfactory.com/
http://www.pingidentity.com/
http://www.saleslogistix.com/
http://www.etherios.com/
http://aspiratech.net/
http://www.xobni.com/
http://www.teamsupport.com/
http://www.predictiveresponse.com/
http://salesoptimizer.force.com/
https://www.myonelogin.com/
http://www.rallydev.com/
http://www.netkiller.com/
The following list is the list of 55 companies according to the Finance business unit that have been used in this study (the URL’s of companies):

http://www.bigmachines.com/
http://www.avankia.com/
http://www.zenkraft.com/
https://www.timeclockonline.com/
http://www.interweave.biz/
http://www.dreamfactory.com/
http://www.financialforce.com/
http://www.chikpea.com/
http://www.glovia.com/html/
http://www.zuora.com/
http://www.rogueit.net/
http://www1.app-x.com/
http://www.kugamon.com/
http://www.expensewire.com/
http://www.exari.com/
http://www.springcm.com/
http://www.westcoastconsulting.com/
http://www.softappspro.com/
http://www.accorto.com/
http://www.expensewatch.com/
http://salesoptimizer.force.com/
The following list is the list of 15 companies according to the HR business unit that have been used in this study (the URL’s of companies):

https://www.timeclockonline.com/
http://www.jobscience.com/
http://www.expensewire.com/
http://www.incentiveprograms.com/
http://www.expensewatch.com/
https://www.expensify.com/
http://salesoptimizer.force.com/
http://www.targetrecruit.net/
http://www.dreamfactory.com/
http://www.fairsail.com/
http://www.americandatacompany.com/
http://www.docverify.com/
http://www.entransform.com/
http://www.perceptivesoftware.com/
http://www.appynet.com/
http://www.riptideforce.com/
Appendix-2: List of companies for each sales factor

Sorted by highest weighted loading

Factor 1: Quote Generation

http://www.access-commerce.com/
http://www.echosign.com/
http://www.bigmachines.com/
http://www.terralign.com/
http://coldcalling101.com/
http://jott.com/
http://www.activeprime.com/
http://www.cincomacquire.com/
http://www.m5net.com/
http://www.makanasolutions.com/
http://www.mkpartners.com/
http://www.riptideforce.com/
http://www.varicent.com/
http://www.arrowpointe.com/
http://www.millerheiman.com/
http://www.docusign.com/

Factor 2: Quote Tracking

http://www.access-commerce.com/
http://www.bigmachines.com/
http://www.terralign.com/
http://www.echosign.com/
http://coldcalling101.com/
http://jott.com/
http://www.activeprime.com/
http://www.cincomacquire.com/
http://www.m5net.com/
http://www.makanasolutions.com/
http://www.mkpartners.com/
http://www.riptideforce.com/
http://www.varicent.com/
Factor 3: Sales Contracts Management and E-signatures
Factor 4: Sales Territory

http://www.terralign.com/
http://www.access-commerce.com/
http://www.bigmachines.com/
http://www.activeprime.com/
http://www.echosign.com/
http://coldcalling101.com/
http://jott.com/
http://www.cincomacquire.com/
http://www.m5net.com/
http://www.makanasolutions.com/
http://www.mkpartners.com/
http://www.varicent.com/
http://www.riptideforce.com/
http://success.territoryplan.com/
http://www.territoryplan.com/
http://www.arrowpointe.com/

Factor 5: Sales Pipeline and Analyzing Events

http://www.right90.com/
http://www.ahasoftware.com/
http://www.millerheiman.com/
http://www.emasys.com/
http://www.cloud9analytics.com/
http://www.thetasgroup.com/
http://www.activeprime.com/
http://chapmanhq.com/
Appendix 3: List of companies for each marketing factor

Sorted by highest weighted loading

**Factor 1: Marketing Automation**

http://www.genius.com/
http://www.eloqua.com/
http://www.etrigue.com/
http://www.activeconversion.com/
http://www.salesfusion.com/
http://www.genoo.com/
http://www.silverpop.com/
http://www.loopfuse.com/
http://www.nurturemyleads.com/
http://www.treehousei.com/
http://www.maasimpact.com/
http://www.predictiveresponse.com/
http://www.predictiveresponse.com/
http://www.makesbridge.com/
http://www.pardot.com/
http://www.rightoninteractive.com/
http://www.strongmail.com/

**Factor 2: Relationship Marketing**

http://www.zoominfo.com/
http://www.netprospex.com/
http://www.demandbase.com/
http://www.onesource.com/

**Factor 3: Integrated Marketing Communications**

http://www.demandresults.com/
http://www.genius.com/
Factor 4: Permission Marketing
Factor 5: Lead Management

http://www.eloqua.com/
http://www.salesfusion.com/
http://www.genius.com/
http://www.etrigue.com/
http://www.activeconversion.com/
http://www.silverpop.com/
http://www.predictive response.com/
http://www.pardot.com/
http://www.nurturemyleads.com/
http://www.loopfuse.com/
http://www.treehousei.com/
http://www.makesbridge.com/
http://www.genoo.com/
http://www.boldchat.com/
http://www.maasimpact.com/

Factor 6: Market Research

http://www.arrowpointe.com/
http://www.activeconversion.com/
http://www.astadia.com/
http://www.boomi.com/
http://www.conduitonline.com/
http://www.springcm.com/
http://www.genoo.com/
http://www.istrategicpartners.com/
http://www.aprimo.com/
http://www.dreamfactory.com/
http://www.paretosystems.com/
Factor 7: Advertising

http://www.genius.com/
http://www.walkerinfo.com/
http://www.nurturemyleads.com/
http://www.maasimpact.com/
http://www.aprimo.com/
http://www.istrategicpartners.com/
http://www.genoo.com/
http://www.conduitonline.com/
http://www.astadia.com/
http://www.activeconversion.com/
http://www.eloqua.com/
http://www.silverpop.com/
http://www.sharemethods.com/
http://www.zoominfo.com/
http://www.salesfusion.com/
http://www.treehousei.com/
Factor 8: Internet Marketing

http://www.demandresults.com/
http://www.strongmail.com/
http://www.conduitonline.com/
http://www.genius.com/
http://www.silverpop.com/
http://www.activeconversion.com/
http://www.genoo.com/
http://www.treehousei.com/
http://www.maasimpact.com/
http://www.salesfusion.com/
http://www.sharemethods.com/
http://www.nurturemyleads.com/
http://www.eloqua.com/
http://www.pagevester.com/en/
http://www.predictiveresponse.com/
http://www.predictiveresponse.com/
http://www.boulderlogic.com/
http://www.pardot.com/
http://ondemand.magneticnorth.com/
http://presentation.brainshark.com/
http://www.etrigue.com/
http://www.rightoninteractive.com/
http://www.loopfuse.com/
http://www.emailvision.com/
http://www.makesbridge.com/

Factor 9: Campaign Management

http://www.activeconversion.com/
Appendix- 4: List of companies for each product management factor

Sorted by highest weighted loading

Factor 1: Competitive Analysis

http://www.ahasoftware.com/
http://www.roambi.com/
http://www.sendside.net/
http://www.rumbleware.com/
http://www.accorto.com/
http://www.gooddata.com/
https://www.cloud9analytics.com/
http://www.demandresults.com/
http://www.dreamfactory.com/
http://funnelsource.com/
http://www.right90.com/
http://www.salesfusion.com/
http://www.demandbase.com/
http://www.deciphertech.com/
http://www.crystalreports.com/
http://www.acfsolutions.com/
http://www.inetsoft.com/
http://www.domodomain.com/
http://www.leadlander.com/

Factor 2: Product Design

http://www.vendavo.com/
http://www.landslide.com/
http://www.valgen.com/
http://www.angoss.com/
http://www.faondemand.com/
http://www.xactium.com/
http://www.managementscorecards.com/
http://www.terralign.com/
http://community.qlikview.com/
http://www.visokio.com/
http://www.domodomain.com/
http://www.leadlander.com/
Factor 3: Product Management

http://www.ahasoftware.com/
http://www.sendside.net/
http://www.rumbleware.com/
https://www.cloud9analytics.com/
http://www.roambi.com/
http://www.accorto.com/
http://www.gooddata.com/
http://www.demandresults.com/
http://funnelsource.com/
http://www.dreamfactory.com/
http://www.deciphertech.com/
http://www.right90.com/
http://www.crystalreports.com/
http://www.salesfusion.com/
http://www.demandbase.com/
http://www.domodomain.com/
http://www.inetsoft.com/
http://www.acfsolutions.com/
Appendix- 5: List of companies for each support and maintenance factor

Sorted by highest weighted loading

**Factor 1: Call Center Operations**

http://www.instantservice.com/
http://www.zoomerang.com/salesforce/
http://www.ebiztech.com/
http://www.teamsupport.com/
http://www.contactual.com/
http://solutions.liveperson.com/
http://www.liveops.com/salesforce/
http://www.insitusoftware.com/itools-delegated.php
http://www.activalive.com/
http://forcebydesign.com/a/
http://www.five9.com/
http://www.linvio.com/
http://www.forcemeister.com/
http://www.arrowpointe.com/
http://timedriver.timetrade.com/
http://www.ilinc.com/
http://info.helpstream.biz/HelpstreamCommunities.html
http://www3.formassembly.com/pricing.php
http://www.kampyle.com/
http://www.toucancrm.com/
http://www.x2od.com/
http://www.scoutsft.com/
http://www.westcoastconsulting.com/
http://www.cloudconversion.com/
http://ondemand.magneticnorth.com/
http://www.exactship.com/
http://www.saaspoint.com/
http://www.demandresults.com/
http://www.qas.co.uk/index-a.htm
https://curecrm.com/net/
http://www.zenkraft.com/
http://www.postcodeanywhere.co.uk/
http://www.insidesales.com/
http://www.vista-survey.com/
Factor 2: Support Services Management

http://www.inetsoft.com/
http://www.scoutsft.com/
http://www.go2group.com/display/theme/Home
http://forcebydesign.com/a/
http://www.amctechnology.com/
http://www.teamsupport.com/
http://www.ortoomail.com/
https://curecrm.com/net/
http://www.kampyle.com/
http://www.gpsdashboard.com/home/home.jsp
http://www.insitusoftware.com/itools-delegated.php
http://www.fairsail.com/
http://www.zoomerang.com/salesforce/
http://www.walkerinfo.com/
http://www.cloudconversion.com/
http://www.bmt-business.co.il/cms/
http://www.forcemeister.com/
http://www.snapabug.com/
http://www.qas.co.uk/index-a.htm
http://www.steadfastglobal.com/
http://www.liveops.com/salesforce/

Factor 3: Knowledge Base

http://www3.formassembly.com/pricing.php
http://www.zoomerang.com/salesforce/
http://www.insitusoftware.com/itools-delegated.php
http://www.teamsupport.com/
http://www.postcodeanywhere.co.uk/
http://www.walkerinfo.com/
http://www.incontact.com/
http://www.getsatisfaction.com/
http://www.x2od.com/
http://www.demandresults.com/
http://www.americandatacompany.com/
http://www.panterranetworks.com/
Factor 4: Support Metrics
Factor 5: Licensees Management

http://www.zoomerang.com/salesforce/
http://www.clicktools.com/sfdc/
http://www.inetsoft.com/
http://www.8x8.com/
http://www.contactical.com/
http://www.panterranetworks.com/
http://www.five9.com/
http://www.incontact.com/
http://www.instantservice.com/
http://www.insidesales.com/
http://www.liveops.com/salesforce/
http://www.walkerinfo.com/
http://www.activalive.com/
http://www.ebiztech.com/
http://www.x2od.com/
http://www.teamsupport.com/
http://www.americandatacompany.com/
http://www.amctechnology.com/
http://www3.formassembly.com/pricing.php
http://www.bceleix.com/ImpresarioWebSalesforce.asp?lng=1
http://www.insitusoftware.com/itools-delegated.php
http://ondemand.magneticnorth.com/
http://www.liinc.com/
http://www.linvio.com/
http://forcebydesign.com/a/

Factor 6: Helpdesk

http://www.insitusoftware.com/itools-delegated.php
http://www.postcodeanywhere.co.uk/
http://www.zoomerang.com/salesforce/
http://www.walkerinfo.com/
http://www.getsatisfaction.com/
http://www.cloudconversion.com/
http://forcebydesign.com/a/
http://www.linvio.com/
http://www.demandresults.com/
Factor 7: Customer Service

http://www.contactual.com/
http://www.five9.com/
http://www.instantservice.com/
http://info.helpstream.biz/HelpstreamCommunities.html
http://www.ebiztech.com/
http://solutions.liveperson.com/
http://www.activexlive.com/
http://www.liveops.com/salesforce/
http://www.teamsupport.com/
http://forcebydesign.com/a/
http://www.panterranetworks.com/
http://www.exactship.com/
http://www.arrowpointe.com/
http://www.westcoastconsulting.com/
http://www.ilinc.com/
http://www.8x8.com/
http://www.amctechnology.com/
http://timedriver.timetrade.com/
http://www.kampyle.com/
http://www.saaspoint.com/
http://www.linvio.com/
http://www.scoutsft.com/
http://www.qas.co.uk/index-a.htm
https://curecrm.com/net/
http://www.forcemeister.com/
http://www.exactship.com/
http://www.arrowpointe.com/
http://www.toucancrm.com/
http://www.zoomerang.com/salesforce/
http://www.insitusoftware.com/itools-delegated.php
http://www.postcodeanywhere.co.uk/
http://www.zenkraft.com/
http://www.demandresults.com/
http://www3.formassembly.com/pricing.php
http://www.bceelix.com/ImpresarioWebSalesforce.asp?lng=1
Appendix- 6: List of companies for each HR factor

Sorted by highest weighted loading

**Factor 1: Employee Promotions**

- http://www.incentiveprograms.com/
- https://www.expensify.com/
- http://www.expensewire.com/
- http://www.expensewatch.com/
- http://www.fairsail.com/
- https://www.timeclockonline.com/
- http://www.targetrecruit.net/

**Factor 2: Career Development**

- http://www.perceptivesoftware.com/
- http://www.appynet.com/
- http://www.entransform.com/
- http://www.docverify.com/
- http://www.fairsail.com/
- http://www.americandatacompany.com/
- http://www.riptideforce.com/
- https://www.expensify.com/

**Factor 3: Recruitment and Performance Reviews**

- http://www.fairsail.com/
- http://www.targetrecruit.net/
- http://www.incentiveprograms.com/
- https://www.expensify.com/
- http://www.expensewatch.com/

**Factor 4: Hiring Process**

- http://www.targetrecruit.net/
Factor 5: Employee Transfer

http://www.dreamfactory.com/
http://www.fairsail.com/
http://www.expensewatch.com/
http://www.riptideforce.com/
https://www.timeclockonline.com/

http://www.dreamfactory.com/
http://www.americandatacompany.com/
http://www.riptideforce.com/
http://www.entransform.com/
http://www.perceptivesoftware.com/
http://www.docverify.com/
http://www.appynet.com/
Appendix- 7: List of companies for all business factors

Sorted by highest weighted loading

Factor 1: Marketing Automation

http://www.eloqua.com/
http://www.genius.com/
http://www.etrigue.com/
http://www.activeconversion.com/
http://www.salesfusion.com/
http://www.genoo.com/
http://www.silverpop.com/
http://www.loopfuse.com/
http://www.nurturemyleads.com/
http://www.treehousei.com/
http://www.maasimpact.com/
http://www.makesbridge.com/
http://www.pardot.com/
http://www.rightoninteractive.com/
http://www.strongmail.com/
http://www.emailvision.com/
http://www.3marketeers.com/
http://presentation.brainshark.com/
http://www.conduitonline.com/
http://www.printsf.com/
http://www.demandresults.com/
http://www.pagevester.com/en/
http://www.toucancrm.com/
http://www.aprimo.com/
http://www.validar.com/

Factor 2: Project Management

http://www.attask.com/
http://www.saleslogistix.com/
http://www.projectorpsa.com/
http://www.open.collab.net/
http://dreamfactory.com/
Factor 3: Administration Support Operations

http://www.zoomerang.com/salesforce/
http://www.insitusoftware.com/itools-delegated.php
http://www.clicktools.com/sfdc/
http://www.instantservice.com/
http://www.teamsupport.com/
http://www3.formassembly.com/pricing.php
http://www.contactual.com/
http://www.8x8.com/
http://www.x2od.com/
http://www.bceelix.com/ImpresarioWebSalesforce.asp?lng=1
http://www.ebiztech.com/
http://www.five9.com/
http://www.incontact.com/
http://www.panterranetworks.com/
http://www.liveops.com/salesforce/
http://www.insidesales.com/
http://www.linvio.com/
http://forcebydesign.com/a/
http://www.americandatacompany.com/
http://www.iilinc.com/
http://www.amctechnology.com/
http://timedriver.timetrade.com/
http://www.forcemeister.com/
http://www.ihance.com/
http://www.getsatisfaction.com/
http://www.scoutsft.com/
http://www.zenkraft.com/
http://info.helpstream.biz/HelpstreamCommunities.html
http://www.westcoastconsulting.com/
http://www.cloudconversion.com/
http://survey.timbasoftware.com/
http://www.saaspoint.com/
https://curecrm.com/net/
http://www.snapabug.com/
http://www.virtrock.com/vrdrupal/

Factor 4: Finance Operations
Factor 5: Permission Marketing

http://www.demandresults.com/
http://www.genius.com/
Factor 6: Call Center Operations

http://www.liveops.com/salesforce/
http://www.five9.com/
http://www.contactual.com/
http://www.panterranetworks.com/
http://www.8x8.com/
http://www.incontact.com/
http://www.amctechnology.com/
http://www.bceelix.com/impresarioWebSalesforce.asp?lng=1
http://www.clicktools.com/sfdc/
http://www.zoomerang.com/salesforce/
http://www.instantservice.com/
http://www.ebiztech.com/
http://www.insidesales.com/
http://www.teamsupport.com/
http://www3.formassembly.com/pricing.php
http://www.insitusoftware.com/itools-delegated.php
http://info.helpstream.biz/HelpstreamCommunities.html
http://forcebydesign.com/a/
http://www.americandatacompany.com/
http://www.x2od.com/
Factor 7: Integrated Marketing Communications

http://www.genius.com/
http://www.demandresults.com/
http://www.insideview.com/
http://www.access-commerce.com/
http://presentation.brainshark.com/
http://www.clicktools.com/
http://www.eloqua.com/
http://www.salesfusion.com/
http://www.genoo.com/
http://www.strongmail.com/
http://www.activeconversion.com/
http://www.etrigue.com/
http://www.nurturemyleads.com/
http://www.bigmachines.com/
http://www.silverpop.com/
http://www.loopfuse.com/
http://www.clicktools.com/sfdc/
http://www.maasimpact.com/
http://www.pardot.com/
http://www.3marketeers.com/
http://www.astadia.com/
Factor 8: IT Operations

http://www.solidcore.com/
http://aspiratech.net/
https://www.myonelogin.com/
http://www.mastermindsoftware.com/
http://www.pivotlink.com/
http://www.kugamon.com/
http://www.cloudshare.com/
http://www.salesways.com/
http://www1.app-x.com/
http://www.zuora.com/
http://www.glovia.com/html/
http://www.rogueit.net/
http://www.contactual.com/
http://www.activalive.com/
http://www.springcm.com/
http://www.sendside.net/
http://www.chikpea.com/
http://www.thetasgroup.com/
http://www.financialforce.com/
http://www.demandbase.com/
http://www.zenkraft.com/
http://www3.formassembly.com/pricing.php
http://www.funnelsource.com/
http://www.sharemethods.com/
http://www.interweave.biz/
http://www.radianscore.com/
http://www.xactlycorp.com/
https://www.timeclockonline.com/
http://www.drawloop.com/
http://dreamfactory.com/
http://www.millerheiman.com/
http://www.docusign.com/
http://www.avankia.com/
http://www.cloud-craze.com/
http://coldcalling101.com/
http://jott.com/
http://www.activeprime.com/
http://www.cincomacquire.com/
http://www.m5net.com/
http://www.makanasolutions.com/
http://www.riptideforce.com/
http://www.varicent.com/
http://www.info welders.com/
http://www.inin.com/Pages/default.aspx
http://www.etouch.net/home/
Factor 9: Business Services

http://aspiratech.net/
http://radialweb.com/
http://aetheroscrm.com/
http://www.solidcore.com/
http://www.arxxus.com/
http://www.kailea.com/
http://www.arcot.com/
https://www.myonelogin.com/
http://www.multifa.com/
http://www.conformity-inc.com/
http://www.pingidentity.com/
http://www.rallydev.com/
http://www.xobni.com/
http://www.samanage.com/
http://zipsearcher.com/
http://www.cyangate.com/
http://www.funnelsource.com/
http://www.deciphertech.com/
http://www.fairsail.com/
http://www.vendavo.com/
http://www.valgen.com/
http://www.leadlander.com/
https://www.cloud9analytics.com/
http://www.angoss.com/
http://www.postalmethods.com/
http://www.xactium.com/
http://www.roambi.com/
http://www.managementscorecards.com/
http://www.inetsoft.com/
http://www.postalmethods.com/
http://www.postcodeanywhere.co.uk/
http://www.enzigma.com/
http://www.linvio.com/
http://www.teamsupport.com/
http://www.callidussoftware.com/
http://www.cloud9analytics.com/
http://www.invisiblecrm.com/
http://www.landslide.com/
http://www.netprospex.com/
http://www.predictiveresponse.com/
http://www.spisales.com/
http://www.territoryplan.com/
http://www.ninthewavesolutions.com/
http://www.rumbleware.com/
http://www.ahasoftware.com/
http://www.exactship.com/
http://www.cloudconversion.com/
http://www.westcoastconsulting.com/
http://timedriver.timetrade.com/
http://forcebydesign.com/a/
http://www.insitiosoftware.com/itools-delegated.php
http://www.ebiztech.com/
http://www.zoomerang.com/salesforce/
http://www.liveops.com/salesforce/
http://www.artesiansolutions.com/
http://www.emasys.com/
http://www.exaricom/
http://www.expensewatch.com/
http://www.incentiveprograms.com/
http://www.expensewire.com/
http://www.instantservice.com/
http://ink-a-note.com/
http://www.zoominfo.com/
http://www.saleslogistix.com/
http://www.saaspoint.com/
http://www.ilinc.com/
http://www.crystalreports.com/
http://www.marketo.com/
http://www.mastermindsoftware.com/
http://www.pivotlink.com/
http://www.kugamon.com/
http://www.cloudshare.com/
http://www.salesways.com/
http://www1.app-x.com/
http://www.zuora.com/
Factor 10: Data Management

https://www.myonelogin.com/
http://www.solidcore.com/
http://www.arxxus.com/
http://www.rallydev.com/
http://www.arcot.com/
http://aspiratech.net/
http://www.conformity-inc.com/
http://www.samanage.com/
http://www.etherios.com/
http://www.kailea.com/
http://aetheroscrm.com/
http://www.xobni.com/
http://www.pingidentity.com/
http://www.multifa.com/
http://zipsearcher.com/
http://www.cyangate.com/
http://funnelsource.com/
http://www.deciphertech.com/
http://www.fairsail.com/
http://www.vendavo.com/
http://www.valgen.com/
http://www.leadlander.com/
https://www.cloud9analytics.com/
http://www.angoss.com/
http://www.postalmethods.com/
http://www.xactium.com/
http://www.roambi.com/
http://www.managementscorecards.com/
http://www.inetsoft.com/
http://www.teravisiontech.com/
http://www.accorto.com/
http://www.goooddata.com/
http://communityqlikview.com/
http://www.kampyle.com/
http://www.zymesolutions.com/
http://chapmanhq.com/
http://www.bceelix.com/ImpresarioWebSalesforce.asp?lng=1
http://www.8x8.com/
http://www.getsatisfaction.com/
http://www.payonomy.com/
http://www.mydbsync.com/
http://www.steadfastglobal.com/
http://www.virtrock.com/vrdrupal/
http://www.snapabug.com/
http://www.americandatacompany.com/
http://www.amctechnology.com/
http://www.incontact.com/
http://www.panterranetworks.com/
http://www.arrowpointe.com/
http://www.istategicpartners.com/
http://www.myprivacyadvisor.com/
http://www.ihance.com/
http://us.intacct.com/
http://www.terralign.com/
http://www.echosign.com/
http://www.clicktools.com/sfdc/
http://www.bigmachines.com/
http://www.access-commerce.com/
http://radialweb.com/
http://www.4syndication.com/
http://www.vista-survey.com/
http://www.walkerinfo.com/
http://www.santcorp.com/
http://www.boldchat.com/
http://www.enzigma.com/
http://www.postcodeanywhere.co.uk/
http://www.dreamfactory.com/
http://www.marketsync.com/
http://solutions.liveperson.com/
http://www.boomi.com/
http://www.insideview.com/

Factor 11: Business Services

http://www.zoomerang.com/salesforce/
http://www.genius.com/
http://www.8x8.com/
http://www.nurturemyleads.com/
http://www.eloqua.com/
http://www.snapabug.com/
http://www.toucancrm.com/
http://www.printsf.com/
http://www.astadia.com/
http://survey.timbasoftware.com/
http://www.virtrock.com/vrdrupal/
http://info.helpstream.biz/HelpstreamCommunities.html
http://www.scoutsft.com/
http://www.rightoninteractive.com/
http://www.stratascope.com/
http://www.payonomy.com/
http://www.zenkraft.com/
http://zipsearcher.com/
http://www.ihance.com/
http://www.solidcore.com/
http://www.greatvines.com/

Factor 12: Marketing Campaigns

http://www.nurturemyleads.com/
http://www.conduitonline.com/
http://www.treehousei.com/
http://www.genius.com/
http://www.salesfusion.com/
http://www.3marketeers.com/
http://www.maasimpact.com/
http://www.strongmail.com/
http://www.silverpop.com/
http://www.activeconversion.com/
http://www.loopfuse.com/
http://www.eloqua.com/
http://www.genoo.com/
http://www.emailvision.com/
http://www.aprimo.com/
http://www.etrique.com/
http://www.realmagnet.com/
http://www.toucancrm.com/
http://www.pagevester.com/en/
http://www.demandresults.com/
http://presentation.brainshark.com/
http://www.printsf.com/
http://zipsearcher.com/
http://www.documentmall.com/salesforce/
http://www.pardot.com/
http://www.validar.com/
http://www.astadia.com/
http://www.cyangate.com/
http://www.greatvines.com/
http://www.walkerinfo.com/
http://www.fairsail.com/
http://www.boldchat.com/
http://www.stratascope.com/
http://www.rightoninteractive.com/
http://www.domodomain.com/
http://www.makesbridge.com/
http://www.boomi.com/
http://ondemand.magneticnorth.com/
http://www.marketsync.com/
http://www.crmfusion.com/
http://www.paretosystems.com/
http://www.boulderlogic.com/
http://www.lasso2go.com/
http://www.vista-survey.com/
https://www.mypeoplemaps.com/
http://www.cloud-craze.com/
http://www.clicktools.com/

Factor 13: Lead Management

http://www.eloqua.com/
http://www.salesfusion.com/
http://www.genius.com/
http://www.etrigue.com/
http://www.activeconversion.com/
http://www.silverpop.com/
http://www.nurturemyleads.com/
http://www.loopfuse.com/
http://www.treehousei.com/
http://www.makesbridge.com/
http://www.pardot.com/
Factor 14: Project Execution

http://www.attask.com/
http://www.saleslogistix.com/
http://www.open.collab.net/
http://dreamfactory.com/