The Case of SUSE Manager

Case-2017-01-SUSE-Manager

1. Introduction

It was Wednesday, July 14, 2010, and Joachim (Joe) Werner had just got off his weekly one-on-one call with his manager. What was supposed to be a normal weekly sync took an unexpected direction when Werner's manager informed him that the company was assigning him to be in charge of the SUSE Manager project. SUSE Manager is a software product used to manager IT assets of large enterprises. Werner was a product manager at SUSE, the world's first provider of an enterprise Linux distribution, headquartered in Nuremberg.

Werner remarked:

> "This is going to be a challenging assignment. Novell, SUSE's parent company, is already offering a systems management solution (ZENworks) within their portfolio catering to a heterogeneous operating systems environment. On the other hand, SUSE Manager is supposed to be an offering for stand-alone Linux management."

At SUSE, the idea for SUSE Manager had been pitched first in July 2008. At the same time, Red Hat, SUSE's main competitor, open-sourced the competing Satellite project's code and created the also competing Spacewalk project. But over the course of the next two years, SUSE Manager had only got as far as receiving concept clearance, because of the lack of a compelling business case that advocated proceeding with the investment.

There was, however, renewed interest within SUSE to explore the feasibility of such an offering, considering Spacewalk had strong chances of becoming the de-facto industry standard and subsequently impacting on SUSE revenues.

The senior management had to make a decision on how to proceed and Werner had six weeks to evaluate the alternatives and make a recommendation to the business management team with the help of a persuasive business case.

2. SUSE at a Glance

2.1 Founding and early days

Roland Dyroff, Burchard Steinbild, Hubert Mantel and Thomas Fehr, three university students and one software engineer, founded the Gesellschaft für Software und System Entwicklung (S.u.S.E) on September 2nd, 1992 in Nuremberg, Germany, with a focus on providing consulting services for the UNIX platform. Powered by a keen interest in the Linux operating system and platform and confidence in its adoption, in 1994 the company started distributing their own version of the Linux operating system branded as S.u.S.E Linux.

S.u.S.E Linux was basically the German version of the Slackware Linux distribution and was released in two variants, the professional and the standard variant. The professional variant offered a greater number of desktop environments than the standard variant and also included additional software. S.u.S.E Linux was not a free offering and was sold on floppy disks, and subsequently CDs, at computer retail outlets and bookstores. S.u.S.E later re-based the operating system on the Jurix distribution, and the Jurix-based S.u.S.E Linux continued to be the company's key offering until the fall of 2000. In the interim, a corporate rebranding saw a change in the name of the company from S.u.S.E to SuSE.

SuSE had always wanted to enter corporate data centers, since most data center servers were based on the UNIX operating system, and a Linux-based offering would be a better alternative to which to migrate. At the same time, IBM had developed a keen interest in SuSE and backed the project to bring SuSE to their data centers. This led to the creation of the first SuSE Linux Enterprise Server (SLES) operating system. This was designed specifically for IBM mainframe S/390 servers. The subsequent releases of SuSE's server operating system for enterprises, SLES, were targeted at different server hardware architectures and not just the S/390.

The 2000 to 2003 period also saw another corporate rebranding exercise when the organization changed its name to SUSE. Throughout this time, Red Hat with its Red Hat Enterprise Linux product was SUSE's primary competitor in the Linux operating system market.

By 2003, the key products within SUSE's product portfolio were SLES, SUSE Linux OpenExchange Server and SUSE Linux Desktop (SUSE's desktop operating system).

2.2 Acquisition by Novell Inc.

The year 2003 witnessed a strong shift in the balance of power in the world of enterprise Linux. In November 2003, Novell, Inc. ("Novell"), a software and services company, which was steadily positioning itself as a competitor to Microsoft, announced an IBM-assisted plan to acquire SUSE for US$210 million. Novell planned to complete this deal by January 2004. This deal not only provided a new direction to Novell's rivalry with Microsoft, but also increased the competitive pressures on Red Hat. Since this announcement followed close on the heels of Novell's acquisition of Ximian, a Linux software provider, it reaffirmed the industry's views of Novell's commitment to the Linux platform. One of Ximian's key offerings was the Red Carpet Linux package management software.

Soon after these acquisitions, Novell announced an organizational restructuring. From SUSE's perspective this resulted in SUSE no longer being an independent entity, but a Product Business Unit (PBU) within Novell's organization; these units were also referred to as

Open Platform Solutions (OPS) (see [Exhibit 1](#)). SUSE was not a stand-alone entity anymore, but still a strong brand name.

The business development manager at Novell, Peter Chadwick, remarked:

> "Such a structure meant that even though the head of the SUSE PBU owned the definition and development of a set of products, Sales and Marketing were driven by corporate forces from outside of SUSE."

Additionally, there was a Business Management Team (BMT) that reviewed all product decisions across all of the product groups. The lead of the BMT was also the head of the Systems and Resource Management PBU within Novell. So invariably, product decisions within the SUSE portfolio were contingent upon approvals from another product group head.

2.3 Product portfolio

From 2004 to 2009, SUSE established itself as a key brand within Novell's product portfolio. With SUSE's products among its core offerings, by 2010, Novell was developing and delivering a diversified portfolio, with a special interest in investing in two main areas:

1. Linux-based operating system software.

2. Information Technology (IT) management software for systems, identity and security management for mixed operating system environments.

A key strategic focus within Novell was to gain market leadership in the Intelligent Workload Management category, a new computing model that enabled IT organizations to manage and optimize their computing resources across a heterogeneous environment – physical, virtual and cloud computing. With this strategic objective in mind, it had organized itself around four PBUs (see [Exhibit 2](#)) – Open Platform Solutions (SUSE products), Identity and Security Management, Systems and Resource Management and Workgroup.

- Open Platform Solutions – This name of this business unit was derived from the Linux-based products in SUSE's portfolio (see [Exhibit 3](#)). SUSE Linux Enterprise, the open source operating system for professional deployment in IT environments, was the operating system on which all of SUSE's modules and extensions were based. SUSE Linux Enterprise Server (SLES), the server operating system, continued to be the key offering within SUSE's portfolio.

- Identity and Security Management – Novell designed those solutions to help customers secure and manage their IT assets while ensuring compliance with government and industry standards.

- Systems and Resource Management – The products within this business unit were designed to ensure that customers could automate the management of enterprise-wide IT resources. A key offering within this PBU was the ZENworks product suite which provided central management of an enterprise environment consisting of both Windows as well as Linux devices (server, desktop and mobile).

- Workgroup – Workgroup solutions provided the infrastructure, services and the tools which facilitated effective and secure collaboration across a diverse set of devices.

In addition to the technology offerings, Novell also provided professional services, technical support and training services within each of the business unit segments.

2.4 Revenues

Novell generated revenues from software licenses (comprising sales of proprietary licenses), maintenance and subscriptions (product maintenance and Linux subscriptions) and services (comprising professional services, technical support and training services) within each of the business segments. An overview is displayed in Figure 1.

Despite the global financial turmoil of 2008/09 impacting Novell's net revenues, SUSE's business segment experienced steady and profitable growth.

Product Business Units	2009	2008	2007
- Open Platform Solutions (SUSE)	US$ 174,330	US$ 154,857	US$ 119,860
Gross Profit as % of related revenue	*81%*	*73%*	*68%*
- Identity and Security Management	US$ 156,291	US$ 193,990	US$ 204,680
Gross Profit as % of related revenue	*68%*	*59%*	*51%*
- Systems and Resource Management	US$ 182,215	US$ 193,221	US$ 175,616
Gross Profit as % of related revenue	*80%*	*83%*	*81%*
- Workgroup Products	US$ 349,349	US$ 414,445	US$ 432,343
Gross Profit as % of related revenue	*84%*	*84%*	*82%*
Novell, Inc.	**US$ 862,185**	**US$ 956,513**	**US$ 932,499**
Gross Profit as % of related revenue	***78%***	***75%***	***72%***

Figure 1: Novell revenues (in thousands) and gross profit by product business units

Novell attributed the overall decline in 2009 revenues to a 31 percent decline in services revenues and a 38 percent fall in software licenses revenues. The maintenance and subscription revenues on the other hand grew by four percent on the back of strong growth in sales of Linux platform products.

The SLES offering formed a major share of all of Open Platform Solutions revenues. Additionally, reduced software license revenue from the ZENworks product suite was a key factor for the slump in receipts derived from the Systems and Resource Management segment.

3. Existing Offerings for Systems Management

IT organizations needed to undertake a core set of systems management activities in connection with their server operating system instances. These activities included software management, asset management, configuration management, system provisioning, registration/subscription management, and monitoring. While the operating systems themselves generally included tools for manually performing such tasks, this manual approach was not practical when the number of deployed systems became more extensive. Thus, customers with medium to large deployments required automated systems management solutions that allowed them to easily deploy, update, manage and monitor large numbers of systems across disparate physical and virtual platforms. Ideally, customers expected such solutions to be designed specifically for an operating system so that these solutions could exploit the management framework present within the operating system.

Novell's offering to satisfy these customer requirements was the ZENworks product suite.

3.1 ZENworks Linux Management

Novell rebranded the Linux package management software Red Carpet acquired from Ximian, and functionally enhanced it so that it was compatible with the ZENworks Linux Management (ZLM) tool for systems management of Linux servers and workstations. It provided customers with centralized control of functionalities such as desktop lock-down, imaging, remote management, software management and inventory management.

Novell designed ZLM as a generic management framework to manage both RHEL and SUSE Linux Enterprise-based devices. While this proved to be a strong selling point for the product, it lacked sufficiently tight integration with SUSE Linux Enterprise to ensure effective management of the complete SUSE Linux Enterprise product line across different devices.

ZLM as a product was feature-rich and being among the first Linux systems management solutions, it was readily adopted within the industry. However, the setup of the solution required considerable time and the customers saw the overall usability as a challenge. On the whole, the learning curve for Linux system administrators in the case of this solution was steep.

ZLM was distributed using a license-based pricing model. Customers had to pay a one-off license fee (US$206) for every system which the software managed. This license fee also included the cost of the first year's maintenance. Subsequently, customers only had to pay for maintenance. At the end of the first year, if customers wished to retain support for the managed systems, they could purchase one-year (US$41) or three-year (US$111) maintenance Stock Keeping Units (SKUs).

A key aspect of this pricing policy was that Novell only charged its customers on the basis of the managed devices and did not charge for the central management server.

3.2 ZENworks Suite

Novell, however, did not limit ZENworks to only Linux Management. The ZENworks product line offered a wide range of products under the ZENworks Suite brand name which simplified the management of IT resources within an organization, ranging from handheld de-

vices through desktops to servers, and across a variety of operating systems (Windows or Linux).

The ZENworks Suite included components for desktop management, server management, handheld device management, asset inventory, data management, instant messaging, software packaging and patch management. For each of these components, the customers had to purchase separate licenses to be able to use the respective functionalities.

A key release within the ZENworks Suite was ZENworks Configuration Management (ZCM), which provided configuration management of Windows servers and workstations in its initial release. In its subsequent releases, Novell merged ZLM into ZCM, and included ZLM's functionalities as feature offerings within ZCM, thereby ensuring that ZCM could manage both Windows and Linux devices.

The pricing model for each of the ZENworks components was similar to that of ZLM, with the list price being different for each of the components.

3.3 SUSE Linux Enterprise Systems management

Novell offered more than just the dedicated system management tools. The SUSE Linux Enterprise offering itself included tools for administration, configuration and deployment; these were:

- A package management stack which enabled updates of operating system packages.

- An integrated systems management tool for installation and configuration of devices.

- The Novell Customer Center (NCC) and Subscription Management Tool (SMT) for subscription and patch management.

A subscription pricing model was also employed for the SUSE Linux Enterprise offerings. Customers were not required to pay a one-off license fee, but instead paid an annual (or three-yearly) maintenance fee to receive support from Novell for the duration of the subscription. Novell offered these tools within the SUSE Linux Enterprise subscription and they did not require a separate subscription of their own.

The NCC was Novell's interface to customers who opted for SUSE Linux Enterprise subscriptions. Every SUSE Linux Enterprise machine had to connect to the NCC for registration and download of updates. It also made it possible for customers to renew subscriptions, access the knowledge base and monitor their deployments.

In cooperation with the SMT, customers could also automatically assign registration codes to devices using the NCC. SMT in itself allowed for accurate registration and management of the enterprise-wide deployment of SUSE Linux Enterprise.

3.4 Problems with existing offerings

In the case of SLES, the SUSE server operating system, customers historically lacked a comprehensive server management solution designed specifically for this operating system. Customers used alternative methods for maintaining, provisioning, and managing SLES; however, each had its drawbacks.

Some customers used the tools included with the SUSE Linux Enterprise subscriptions. Gerald Pfeifer, director of product management, pointed out:

> "Some of our customers go for one of these basic options because they do not yet see the benefits of a full systems management solution or simply want (or need) to avoid any upfront expense. However, they soon tend to realize that basic tools lack the capabilities of a robust enterprise management solution and we find them a lot more open towards including a systems management offering at a later point, at the latest during their deal renewals."

Other customers that required more extensive management, provisioning, and monitoring capabilities managed their SLES deployments with ZLM or a third-party enterprise management suite. While these solutions addressed the functional requirements of Linux management, they were generic management frameworks and lacked the tight integration with SUSE Linux Enterprise that would provide for consistent and effective management of the complete product line across all architectures and possible forms. Moreover, these management solutions were associated with a steeper learning curve for Linux system administrators.

Finally, another segment of SLES that customers chose to develop in-house were customized server management solutions for their Linux infrastructures. Although these customers tended to be more technically sophisticated, this approach often required additional IT staff input, offered limited functionality, lacked scalability, and carried the risk associated with an unsupported solution. Faced with these alternatives, prospective SLES customers who required an advanced server management solution often chose competing operating systems.

4. Integrated Product Development at Novell

With the aim of improving business performance and addressing market opportunities faster, Novell had designed an Integrated Product Development (IPD) framework. IPD was a framework for making business decisions and ensuring cross-functional team alignment in order to efficiently produce customer-centric products.

Werner was acutely aware that any proposal for a new product would need to clear all the hurdles within the IPD process and that he would need to develop a comprehensive business case in order to satisfy each of the decision criteria for the requisite phases of the process.

4.1 The Integrated Product Development process

Within its IPD framework, Novell had aggregated all the related processes into four key business operations – strategy and business planning, portfolio management, product life-cycle management and development life-cycle management. For each of these areas, they had defined a set of workflows and decision criteria.

- Strategy and business planning – All processes pertaining to business strategy, product/technology, investment planning, competitive positioning, customer satisfaction.

- Portfolio management – All processes pertaining to financial management, resource management, portfolio balance, innovation management.

- Product life-cycle management – All processes pertaining to requirements management, Stage-Gate management, launch management.

- Development life-cycle management – All processes pertaining to project and quality management.

Bringing together all the processes in a framework (see Exhibit 4) ensured that Novell could run its business effectively in a consistent manner.

In order to increase the effectiveness of team dynamics and decision-making in the IPD process, Novell had defined a governance structure which specified who was to make the decisions within each of the key business operations areas and what form each process should take. This structure also outlined the activities of the different decision teams within the organization (see Exhibit 5). The Product Leadership Team (PLT), which was an interdisciplinary team within each business unit, had to initiate any new product idea. The organization, however, could not introduce new products without the approval of the Business Management Team (BMT) and the Executive Leadership Team.

Novell also had a well-defined system for its approval and communication processes. In addition to defining the escalation process in decision-making, it also specified what information would be needed by which stakeholder in the decision teams to arrive at a decision.

4.2 The Stage-Gate Model

Within the IPD framework, it was stipulated that the Stage-Gate process model must be employed for projects. Figure 2 displays this model. Projects involving the development of new products were also such that they needed to go through the Stage-Gate process.
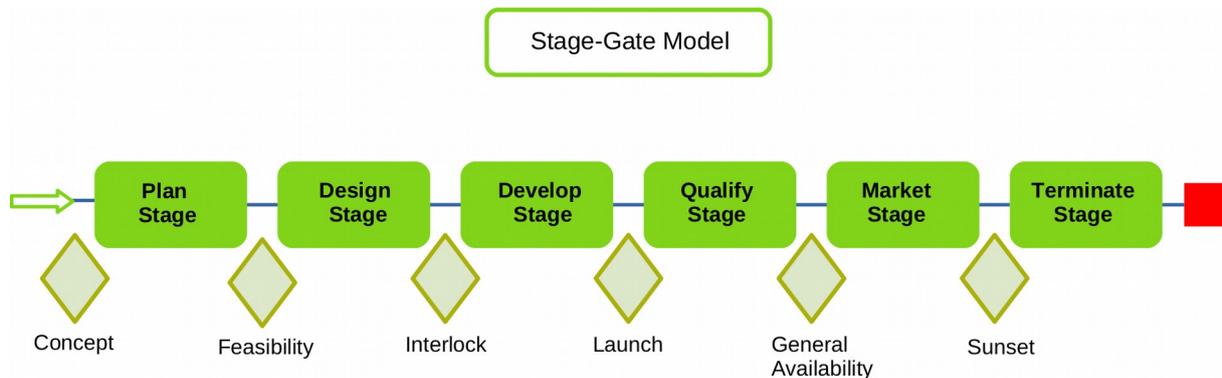
Figure 2: Stage-Gate process model

This process model divides the different activities in a product development process, such as planning, design, development and commercialization, into separate stages, with a management decision gate preceding each stage. Interdisciplinary teams complete a defined set of tasks and provide specified information to obtain management approval at a particular gate and then move on to the next stage of product development. At each gate the management team responsible for approval can opt for one of the available options – go, kill or recycle.

- Go – The management team approves the project and it can move on to the next stage.

- Kill – The management team stops the project and no further input is required.

- Recycle – The management team returns the project for refinement of one or more criteria.

The SUSE Manager project had cleared the concept gate in 2008. The concept gate focused on identifying the business potential and presenting a preliminary report to the management with regard to taking advantage of this opportunity. It was, however, the feasibility gate which warranted an in-depth analysis of the actual business potential as well as the documentation of the business case behind that potential. And, as a consequence, over the course of the last two years, project SUSE Manager had remained at the planning stage and had not yet reached the feasibility gate for want of a compelling business case.

Werner was aware that he had to observe a comprehensive Stage-Gate review format in order to proceed to the next stage. The strict decision-making criteria included both qualitative and quantitative parameters and aspects on the basis of which the management would decide in favor of either Go, Kill or Recycle. The Stage-Gate evaluation framework consisted of the following decision criteria: strategic alignment and importance, market attractiveness, competitive advantage, technical capability, go-to-market features, resource capacity, financial reward and risk management. Werner had to carefully analyze each of these facets with a view to the existing alternatives and make a recommendation to the management team on the way forward. For each of these criteria, Werner and his team had to create documentation and the content required for documentation was dependent on the gate review scheduled for the project.

It was also important for Werner to consider the drivers and decision owners at each of the stages of the process (see Exhibit 6). To pass through the concept gate, only the approval of the Open Platform Solutions' (SUSE) PLT was required. The vice president of the OPS PBU led this PLT. However, on reaching the feasibility gate, Werner would also need BMT approval. Since the head of the Systems and Resource Management PBU led the BMT, any recommendation coming from the Open Platform Solutions (SUSE) PBU for a product directly competing with an existing offering of Systems and Resource Management would be minutely analyzed.

5. Project SUSE Manager

Competitive pressures had driven SUSE's entry into the Linux systems management domain. Mr. Pfeifer added:

> "A key strategic objective is to close the competitive gap with Red Hat in Linux deals, whereby customers will expect a comprehensive systems management solution."

Red Hat was one of SUSE's main competitors. It had entered the realm of Linux systems management back in 2001 with the launch of Red Hat Network (RHN). RHN started out as a hosted service in which Red Hat stored information about the managed devices on its own

servers. Customers downloaded all updates for these managed devices directly from these servers. However, in large distributed environments with thousands of managed devices, such an architecture was highly inefficient from a bandwidth perspective. This led to the creation of the RHN proxy server which acted as an interface between Red Hat's central server and the managed devices. Each proxy server acted as an interface to a subset of the managed devices.

By 2002, Red Hat realized that they could not provide certain advanced systems management functionalities over the internet to the hosted central servers. This led Red Hat to develop the Red Hat Satellite Server as part of the RHN portfolio. Customers had to install this server locally in their IT environment. Over the years, Red Hat Satellite became a stand-alone product and Red Hat's only offering in the Linux systems management domain, with the Satellite Server and Satellite Proxy being the two components of the product.

In 2008, Red Hat decided to release the base code for the Satellite offering and created an open source community project for Linux systems management. They named this project Spacewalk. So while the open source community would drive the Spacewalk project, Red Hat itself continued to offer the Red Hat Satellite product. Red Hat Satellite was the enterprise-level supported and secure offering from Red Hat, as against Spacewalk, which was a community-supported free alternative. The involvement of the open source community meant that in addition to Red Hat's own developers, the community would also develop new functionalities in Linux systems management, which Red Hat could later incorporate into its Satellite offering. Additionally, thanks to Red Hat releasing the source code, this would allow other vendors within the industry to base their enterprise products on the Spacewalk project and increase competition in the Linux systems management category. Moreover, Spacewalk was designed to operate with all the major Linux distributions and not just the RHEL operating system. Red Hat Satellite, however, would continue to only support the RHEL operating system.

These were ominous signs for SUSE. Novell's sales executives felt that customers who were looking for free alternatives in systems management or even those looking to develop system management solutions in-house would adopt Spacewalk. Over time, this could also result in these customers adopting Red Hat Satellite as part of their IT environment. A high level of acquisition of Red Hat Satellite would translate into increased adoption of the RHEL operating system, an outcome that would significantly impact on SLES operating system revenues.

Novell, however, was already offering solutions for heterogeneous systems management, and over the course of the last two years, they had been unable to come up with a compelling argument in favor of a SUSE offering in the stand-alone Linux systems management domain. It was now up to Werner to analyze the existing information and decide how to obtain a recommendation for project SUSE Manager so that it would pass through the feasibility gate.

5.1 Product

The SUSE Manager offering would be an enterprise-level, fully supported Linux systems management solution under the SUSE brand name, based on the open-sourced Spacewalk base code. This was important because Spacewalk was a comprehensive Linux systems management solution and would soon become the industry standard. Moreover, re-packaging the Spacewalk base code within an enterprise offering would result in fast time to market and cost-effective product development in the case of SUSE Manager.

From a product perspective (see Exhibit 7), SUSE Manager would have components similar to those of Red Hat Satellite. It would contain the SUSE Manager Server and SUSE Manager Proxy Server components. The Server would be the central administration and management

platform installed within a company's data center. The Proxy Server, on the other hand, would serve as an interface between the central server and the managed devices in dispersed Linux deployments.

SUSE Manager would provide full-blown Linux systems management functionality. It would be a solution with all of Spacewalk's options, combined with the advantages of ZENworks Linux Management, NCC and SMT. It would not be a generic systems management tool, but focus on Linux-only management and provide the ability to manage all major distributions.

The product would manage inventory, streamline operating system provisioning, schedule automatic remote updates and patches, allow centralized software package management, configuration management and health monitoring of systems (see Exhibit 8). It would also identify the security vulnerabilities within an organization's IT environment and ensure compliance.

In comparison with Red Hat Satellite, the most obvious advantage of this offering would be the ability to manage multiple Linux distributions (SUSE or Red Hat) from a single, centralized platform. Most competing products could offer support for only a specific operating system.

In addition, it would be the only solution which would be tightly integrated with the SLES operating system. This would provide an added incentive for SUSE's existing customers to stick with the platform. Moreover, since SUSE Manager would manage RHEL systems as well, it could ease SUSE entry into traditional Red Hat accounts and ultimately facilitate migration of those customers from RHEL to the SLES operating system.

Using SUSE Manager, customers would be able to manage their Linux deployments across major hardware architectures, virtual platforms and cloud deployments.

5.2 Market analysis

For an enterprise operating across diverse geographical locations, systems management is a core requirement. The operating system deployments across such large enterprises could be Windows-only, Linux-only or heterogeneous (both Windows and Linux). In such scenarios, systems management vendors believed that customers generally went for heterogeneous systems management solutions, which support management of both Windows- and Linux-based devices.

However, recent analyst reports had shed light on a growing trend in the systems management domain. The analysts based their findings on the performance of Red Hat Satellite over the last few years, since it was the largest Linux-only systems management solution available. These reports highlighted the fact that the market for stand-alone Linux systems management systems was steadily increasing as a growing number of organizations were either deploying Linux across their enterprises or adopting a different server management approach wherein they managed their Linux- and Windows-based devices separately through different solutions.

The reports also showed that enterprises were spending 18 percent of overall Linux operating system revenues on Linux systems management. Another positive aspect with regard to the stand-alone Linux systems management option was that Red Hat Satellite had generated an estimated US$66 million in revenue in 2008.

Several industry reports calculated that the Linux operating systems market would be worth US$776 million in 2011, growing at a 9.5 percent compound annual growth rate (CAGR) over a five year period.

5.3 Customers – Targets and value offered

With SUSE Manager, SUSE was targeting those enterprises which deployed 50 or more Linux instances (physical or virtual) and either had a Linux-only environment or were managing Linux instances separately from Windows.

SUSE was acutely aware of the specific challenges its existing and potential target customers were facing (these were in addition to the complications generally associated with systems management concepts):

- High Total Cost of Ownership (TCO) – As the complexity of Linux deployments within an organization grew, the management effort required to manage these systems increased. Customers then had to spend huge amounts to acquire licenses for proprietary systems management solutions. SUSE Manager increased the operating efficiency by automating the management activities and would be a low cost alternative to the proprietary solutions.

- Compliance with regulatory requirements – With the ever-increasing security vulnerabilities in the IT landscape, organizations had to make sure that their servers had the latest security updates. Additionally, their servers needed to have active subscriptions to pass audit requirements. SUSE Manager would help automate the operating system tracking and auditing processes.

- High complexity of managing Linux systems – Most customers not only had heterogeneous deployments across hardware architectures, virtual platforms and cloud deployments, but could also have a variety of Linux distributions in their environment. Ensuring high performance quality, availability and low costs in such a complex setup was a time-consuming and expensive process. SUSE Manager's support of multiple Linux distributions and ability to manage heterogeneous deployments addressed this customer concern.

- Steep learning curves in the case of proprietary solutions – Most proprietary solutions of vendors were designed for Windows-only or mixed deployments. This meant that the terminology and logic used within these solutions were not specific to Linux. For this reason, IT staff had to adapt this to manage their Linux environments. SUSE Manager being a stand-alone Linux systems management offering reduced this learning curve for system administrators by using familiar terminology and logic.

Some of the existing SLES accounts regularly inquired about a server management solution built specifically for this operating system. They wanted a solution that was more comprehensive than the basic management capabilities within SLES.

These insights helped SUSE narrow its target market into specific Linux server management customer segments:

- New customers that were migrating from a UNIX to a Linux environment.

- Customers looking to migrate from RHEL to SLES.

- Existing SLES customers that had not acquired the proprietary ZLM/ZCM solutions.

- Existing ZLM customers that wanted to manage their Linux systems separately from Windows.

In addition, SUSE had also identified the key influencers, decision-makers and purchasers within each organization. An important aspect to consider was whether all these roles were assumed by the same individuals who were involved in Linux operating system purchase decisions.

5.4 The competitive landscape

While analyzing the competitive landscape, Werner had to look at both internal and external competition. The existing systems management offerings of Novell accounted for the internal competition with SUSE Manager. SUSE Manager had to offer a distinct advantage over Novell's ZLM and ZCM solutions for it to warrant any further investigation. Externally, Red Hat's Satellite, Canonical's Landscape, proprietary solutions from Symantec, HP and IBM and in-house server management solutions developed by the customers themselves were a threat to SUSE Manager.

Novell had designed both ZLM and ZCM as generic management frameworks. These solutions came with a steep learning curve for Linux users. These were cross-platform products focused on delivering an ideal heterogeneous solution.

> "Customers often are more or less fine with ZLM's functional capabilities, but tend to express a desire for tighter integration with SLES and an approach which feels more 'native' and optimized for Linux", remarked Pfeifer.

Externally, one of SUSE Manager's competitors would be Canonical's Landscape offering. Canonical was the provider of the most widely-known Linux distribution, Ubuntu. This gave Landscape a high level of brand recognition. Customers could still use Landscape both as a hosted service or for on-premise deployment. It was connected to Ubuntu, which implied that it could only manage Ubuntu-based systems. While Ubuntu deployments exceeded SLES deployments, Ubuntu was simply a well known desktop environment but had not achieved greater penetration in production server deployments. Moreover, customers tended to rely more on the SLES platform when it came to mission-critical computing, meaning that they would prefer a systems management solution tightly integrated with SLES. Additionally, Landscape users felt that it could do with a feature upgrade and the addition of essential systems management functionalities.

The most important competitor for SUSE Manager would be Red Hat Satellite. The main advantage of Satellite was that it was tightly integrated with RHEL, which itself had a high rate of penetration of enterprise environments. This made an upsell of Satellite to existing RHEL accounts relatively easy for Red Hat. Moreover, Red Hat controlled the Spacewalk project, on which SUSE Manager was also based. This implied that not only could they delay the upstream distribution of the latest innovations, but they could also reject SUSE's contributions to the Spacewalk project, all of which would ultimately impact on SUSE Manager's functionality. However, Novell's sales executives were increasingly getting the impression that Satellite's limitation to managing only RHEL systems prove a definite advantage for SUSE Manager. Additionally, customers would bundle SUSE Manager with SLES and this bundle together offered a reduced TCO compared with that of the Red Hat Satellite and RHEL bundle.

Symantec, HP and IBM also offered solutions for systems management. On a product level, these were feature-rich solutions. However, these were proprietary solutions and did not offer the cost advantages which an enterprise-level open source solution provided. They offered

heterogeneous systems management and lacked the tight integration with any specific Linux distribution to be able to offer the 'best of breed' Linux systems management.

Table 1 lists the competitors and their key strengths and weaknesses in overview.

Company Name	Product Name	Key strengths	Key weaknesses
Red Hat	Red Hat Satellite	1. High RHEL penetration 2. High level of connection of Satellite to RHEL deployments 3. Control of Spacewalk	1. Only manages RHEL 2. Higher TCO when combined with RHEL
Canonical	Landscape	Piggy-back on Ubuntu's success	1. Only manages Ubuntu systems 2. Ubuntu largely present in desktop environments only 3. Limited set of features
Symantec/HP/IBM	Altiris etc.	Huge account base of the companies	1. Generic framework 2. Unfamiliar terms and logic for Linux users

Table 1: Competitor strengths and weaknesses

A general facet of all heterogeneous solutions, including those offered by Novell, was that the terminology and logic used by them was unfamiliar to Linux users, resulting in a steeper learning curve.

Competition with SUSE Manager would also come from the in-house server management solutions developed by the customers themselves. Some customers found this option extremely useful. Since these customers designed the products specifically for their needs, such products tended to provide a precisely customized solution for the system management requirements within that organization. However, development of these alternatives required a highly sophisticated in-house IT team, which was expensive to manage. Moreover, these solutions did not scale easily as the size of the deployments increased. And finally, they were always a riskier alternative since professional support was not provided.

5.5 Route-to-market strategy

Novell took its products, including those of the SUSE PBU, to market via multi-channel specialized sales routes. The organization distinguished between direct sales, channel sales and alliance sales routes.

Novell employed field resources worldwide to serve its major enterprise customers directly, as well as reaching out to customers via the web. This constituted its direct sales route. There were channel partners serving the small- and medium-sized enterprises via the channel route.

An additional element of Novell's route-to-market (RTM, traditionally: Go-to-market) strategy was its strategic global alliances with large vendors. Some of the key alliances included those with Dell, HP, IBM and Microsoft.

Novell classified the members of its partner ecosystem (alliance and channel partners) as distributors, value added re-sellers (VARs), system integrators (SIs) and OEMs:

- Distributors – These sold Novell products to computer retail outlets, VARs and other re-sellers.

- SIs – These vendors provided a variety of solutions to diverse market segments. Normally they directly purchased Novell products in large quantities.

- OEMs/Independent Hardware Vendors (IHVs)/Independent Software Vendors (ISVs) – These vendors purchased Novell product licenses or subscriptions, integrated them in their own offerings and sold the combined solution to customers.

Table 2 displays the possible options.

Route to Market	Partner Ecosystem		
Direct	**High Cost**	**Online**	
	Yes	Yes	
Channel	**VAR**	**Distributors**	
	Yes	Yes	
Alliances	**ISV (Add-on/OEM)**	**IHV**	**SI**
	Possible	Yes, not main focus	Yes

Table 2: Planned routes to market

In the case of SUSE Manager, the plan was to exploit the RTM strategy of SLES and sell SUSE Manager as an add-on product with every new sale of SLES. Additionally, SUSE planned to activate all the existing channels to achieve maximum impact and generate some quick wins (successful sales deals) via the following use situations:

- Unix to Linux migration scenarios.

- In the case of SLES accounts which were not using any systems management solution.

- In the case of SLES accounts which were using third party systems management solutions.

To ensure RTM readiness, webcasts, briefings, training and enablement support would need to be provided for marketing purposes prior to the launch.

5.6 Pricing and licensing

Novell offered both proprietary solutions as well as offerings based on open source technologies. Most proprietary offerings were provided using the perpetual licensing model, whereby customers were required to pay a significant license fee upfront to purchase the product and then pay a nominal annual maintenance fee to receive patches and updates. On the other hand, open source offerings employed a subscription model whereby the customers purchased annual subscriptions for the product that entitled them to use the product as well to take advantage of support and maintenance services over the entire duration of the subscription.

The SUSE Manager offering would be a subscription-based offering. Novell would release SUSE Manager under the GNU General Public License v2 (GPLv2) because the underlying Spacewalk project also used the GPLv2 License.

The SUSE Manager installation would consist of a SUSE Manager Server and a number of SUSE Manager Proxy Servers determined by the size of the deployment. In order to use SUSE Manager to manage their Linux deployments, a customer would need to buy subscriptions for the following components:

- SUSE Manager Server – The central administration platform.

- SUSE Manager Proxy Server – The customers would need to purchase one or more Proxy Server subscriptions, based on the size of the deployment.

- SUSE Manager modules – These modules would provide additional functionalities for the SUSE Manager Server. The customers could purchase the modules for every server system that was being managed, either for a single instance per server or for unlimited virtual machine instances per server.

  - Management module – For every managed system, the customer was necessarily required to purchase the management module subscription.

  - Provisioning module – For every managed system, the customer was necessarily required to purchase the provisioning module subscription.

  - Monitoring module – It would be up to customers to decide whether they wanted monitoring capabilities. If they required this functionality, then they had to purchase the monitoring module subscription for every managed system.

SUSE pegged the pricing of SUSE Manager components to the respective Red Hat Satellite offerings to ensure competitiveness. SUSE planned to sell the SUSE Manager SKUs with one- or three-year subscriptions.

SUSE ensured that in large deployments, particularly those with fully virtualized workloads, SUSE Manager would be significantly more competitive in terms of price in comparison with the Red Hat Satellite deployment (see Exhibit 9).

5.7 Organizational planning

The management team was required to evaluate another key element at the feasibility gate – the readiness of the organization to be able to execute the project. This depended on the staffing capacity available versus what the organization would need to deploy on the project, the financial rewards emanating from the project and the assessment of the risks associated with it.

5.7.1 Staffing

The key advantage from a staffing perspective in the case of project SUSE Manager was that Novell did not need to initiate the development work on this product from scratch. Since they had based SUSE Manager on the Spacewalk project, the source code was readily available.

The project staffing needed depended on the engineering headcount which Novell had to deploy and the Sales and Marketing personnel needed. Since Sales and Marketing were shared across all Novell products, the real costs would be with the engineering department.

SUSE divided the engineering input required into four major areas:

- Modification of the Spacewalk server code to the SUSE Linux Enterprise base code.

- Support for the open source database back-end (PostgreSQL).

- Incorporation of the functionality of the Subscription Management Tool and Novell Customer Center in the Spacewalk base code.

- Integration in SUSE Linux Enterprise's package manager solution.

From an engineering perspective, successful completion of these tasks would require personnel in development, quality assurance, support and documentation. In order to ensure that the product met its launch deadline planned for January 2011, engineering estimated that eight engineers would be required for development, two for quality assurance, two for support and a half full-time post for documentation.

Additionally, Novell would also have to assign one full-time product manager and one full-time product marketing manager to this project.

Overall, this meant that Novell would require a relatively low number of people to realize this project compared with that required for other existing projects within the company.

5.7.2 Revenue forecast

SUSE was confident of capturing 1.5 percent of the addressable market with SUSE Manager within the first year of launch (2011) and that it would continue to add two percent market share every year over the following five years.

5.7.3 Risk assessment

Before making a final recommendation, it was imperative that Werner evaluated the risks associated both with going ahead with this investment as well as abandoning the project.

The following risks could arise if SUSE decided to go ahead with project SUSE Manager:

- A key factor to consider would be the dependency on the Spacewalk project and its base code. Since SUSE's key competitor (Red Hat) was driving the Spacewalk project, SUSE had to be ready for rejections of upstream contributions to the project and late availability of the latest innovations due to Red Hat incorporating these at a late stage in the Spacewalk base code.

- Additionally, the dependency on Spacewalk also means that SUSE would need to maintain a Java-based stack because Spacewalk consisted of Java-based components. Since the Open Platform Solutions' engineering team did not have particularly pronounced Java-related skills, project delays and missing of deadlines could happen, which would ultimately impact on projected revenues and SUSE's ability to capture the estimated market share.

- Finally, SUSE Manager could well cannibalize the revenues for Novell's existing offerings for systems management (ZLM and ZCM) if Novell did not achieve a clear distinction between the target market segments.

On the other hand, not going ahead with project SUSE Manager had its own set of risks:

- By adopting Spacewalk-based offerings, customers might be presented with a natural entry path into Red Hat's Satellite solution. As Satellite only supported RHEL-based systems, customers would not bother to deploy the SLES operating system in their enterprise thereby seriously depleting SUSE revenues as SLES was SUSE's largest breadwinner.

- With the SUSE PBU acting as the growth promoter within Novell, a decline in SUSE revenues would lead to a major impact on Novell's share price, something which would not be acceptable to Novell's shareholders.

6. Werner's Dilemma

When Werner's manager put him in charge of the SUSE Manager project, he made it clear to Werner that a Recycle decision by the Business Management Team at the feasibility gate was not an acceptable option for the SUSE PBU leadership.

If Werner could not find a positive business potential for SUSE Manager then he would need to recommend killing the project. While Werner's primary motivation was to build the case for SUSE Manager as a stand-alone product, senior managers within Novell were inclined to either enhance the functionalities offered by ZLM/ZCM or build SUSE Manager and ultimately integrate it with ZLM/ZCM.

Werner was aware that he needed to analyze SUSE Manager with regard to the existing alternatives (internally and externally) on the basis of the decision criteria in the Stage-Gate evaluation framework (see Exhibit 10). He was also wondering whether it would make sense to recommend pulling the plug on ZLM/ZCM altogether if the case for SUSE Manager turned out to be extremely compelling. Werner's recommendation had to be so precise that it could convey the message within the standard IPD business case summary template (see Exhibit 11). If this one page executive summary was not good enough, he could easily lose most of the interest of the management team even before he could start making his case.

Appendix

Exhibit 1– Novell Organizational Structure

CEO

Sales	Marketing	Product Business Units

Direct

Channel

Alliances

Product Marketing

Corporate Marketing

Identity and Security Management

Open Platform Solutions (SUSE)

Systems and Resource Management

Workgroup

E N G I N E E R I N G

Support Functions (Finance, HR, Internal IT)
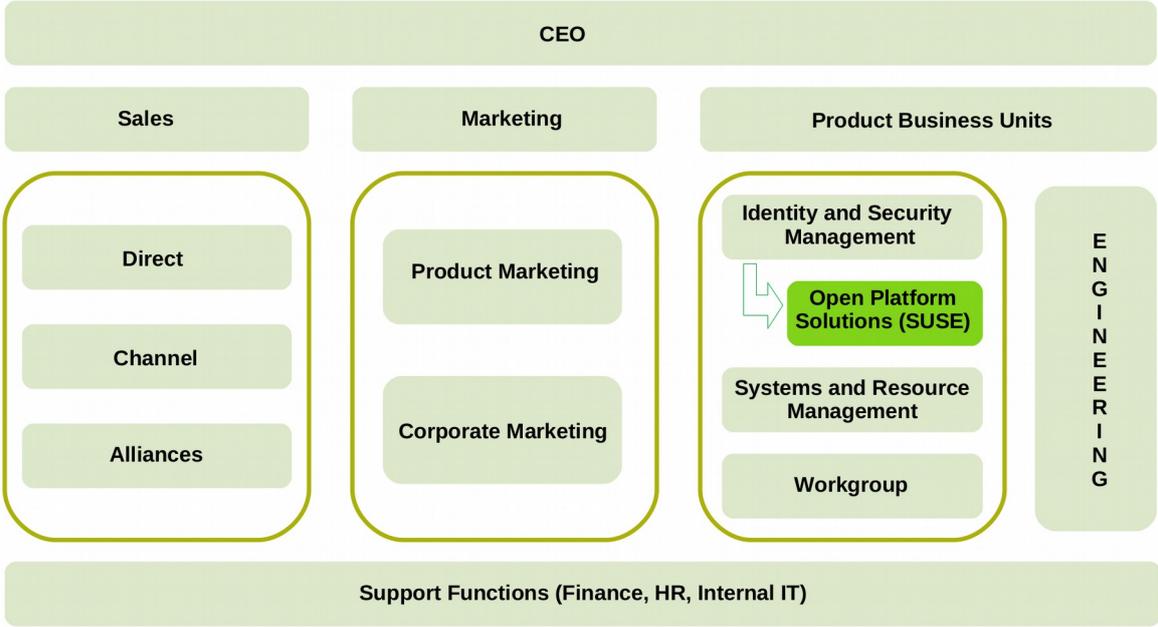
Exhibit 2 – Novell product portfolio

Novell			
Open Platform Solutions (SUSE)	**Identity and Security Management**	**Systems and Resource Management**	**Workgroup Products**
Server	Identity Manager	ZENworks	OES and NetWare Products
Desktop	Access Manager	PlateSpin	Collaboration Products
Virtualization	Secure Login	Business Service Management	Open Workgroup Suite
openSUSE	Sentinel		
	Compliance Management Platform		

Exhibit 3 – SUSE product portfolio

Open Platform Solutions (SUSE)			
Server	**Desktop**	**Virtualization**	**openSUSE**
SUSE Linux Enterprise Server	SUSE Linux Enterprise Desktop	SUSE Linux Enterprise Server	openSUSE
SUSE Linux Enterprise Real Time Extension	SUSE Linux Enterprise Thin Client	SUSE Linux Enterprise Virtual Machine Driver Pack	Software Development Kit
SUSE Linux Enterprise Server for System Z			
SUSE Linux Enterprise Point of Service			
SUSE Linux Enterprise High Availability Extension			

Exhibit 4 – Relationship between IPD operations and activities
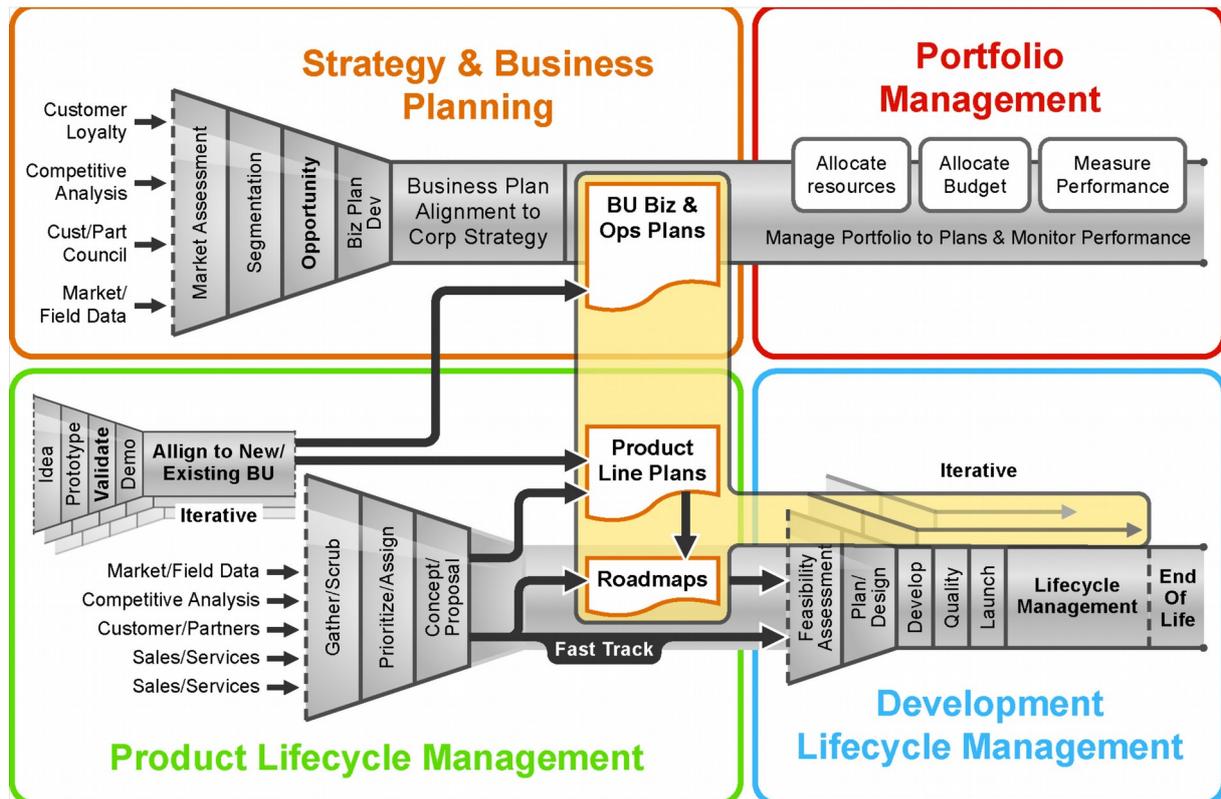
Exhibit 5 – Decision teams in the IPD process

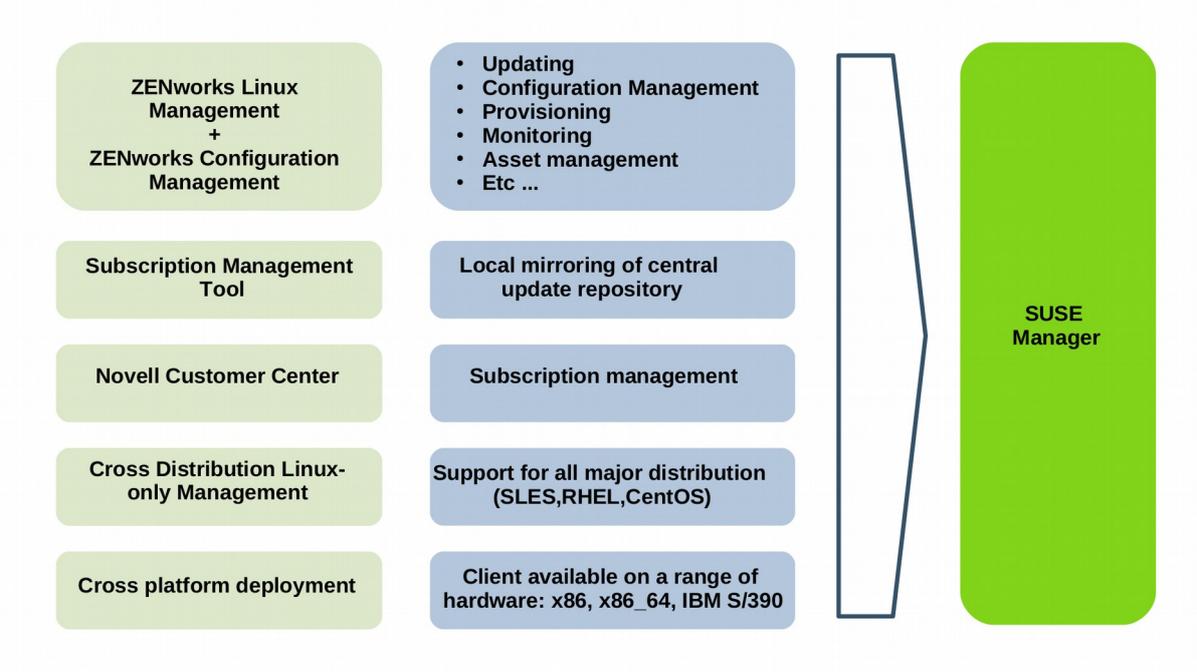| Organization	Teams	Activities
Executive Office	Executive Leadership Team (ELT)	• Corporate vision, objective, goals, metrics • Investment and strategic planning • Cross Business Unit operations
Business Unit	Business Management Team (BMT)	• Business Unit objective, goals, metrics • Integrated portfolio and pipeline management • Business Unit operations
Product Lines	Product Leadership Team (PLT)	• Stage-Gate management • Innovation management • Multiple project execution • Product commercialization • Product life-cycle management
Work Teams	• Project Core and Extended Teams • Development Team • Launch Core Team • Innovation Team	• Project planning and execution • Product development and delivery • Product launch management • Sustaining product development and marketing • Idea prototyping and development

Exhibit 6 – Primary decision owners in Stage-Gate process model

Stage	Gate	Description	Driver	Approval Body
Proposal/idea	Concept	Includes review and approval of the proposal and creation of the project charter	Product Management	PLT
Plan	Feasibility	Includes review and approval of PRD/features Group & Epic stories, High-Level Architecture. Also includes alignment with MRD and Product Business Plan, as well as any updates to the project charter	Product Development (Engineering)	PLT and BMT
Design	Interlock	Includes review and approval of detailed resource and cross-functional plans, aligned to business plans	PLT	PLT
Develop	Launch	Includes review and approval of the Launch Plan, Pricing Proposal, Maintenance Plan, and Release Criteria.	Solution and Product Marketing	PLT and BMT. May require ELT approval
Qualify	GA	Includes review and validation of the release criteria and general readiness by the BMT.	PLT	PLT with review at BMT
Market/Terminate	Sunset	Includes review and approval of the End of Life Plan.	PLT	PLT and BMT, with review at ELT

Exhibit 7 – SUSE Manager product setup
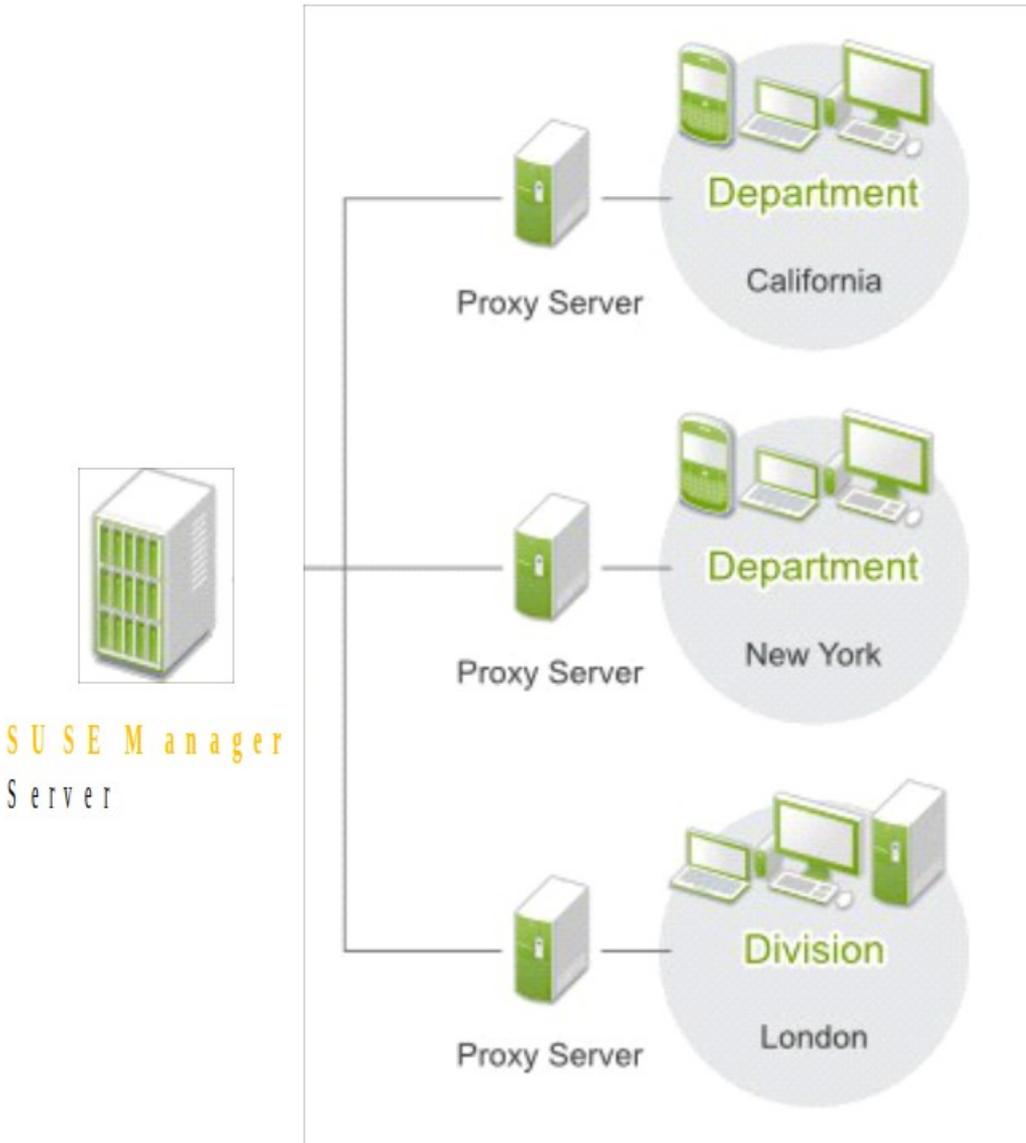
Exhibit 8 – SUSE Manager compared with existing system management offerings by Novell

Novell Offering	SUSE Manager Feature
ZENworks Linux Management + ZENworks Configuration Management	• Updating • Configuration Management • Provisioning • Monitoring • Asset management • Etc ...
Subscription Management Tool	Local mirroring of central update repository
Novell Customer Center	Subscription management
Cross Distribution Linux-only Management	Support for all major distribution (SLES,RHEL,CentOS)
Cross platform deployment	Client available on a range of hardware: x86, x86_64, IBM S/390

SUSE Manager

Exhibit 9 – SUSE Manager vs. Red Hat Satellite pricing

Assume a large customers' IT environment with 3,000 managed devices spread across 10 geographical locations across the world, with 300 devices at each location. At seven of those 10 locations, the customer is running a single instance per managed device and at the remaining locations, the customer is running a fully virtualized environment, which implies unlimited virtual instances per managed device. The customer does not wish to purchase the Monitoring module.

SUSE Manager pricing

SUSE Manager Server subscriptions required = 1

Total number of SUSE Manager Proxy subscriptions required = number of geographical locations = 10

Number of managed systems for each Proxy = 300

Number of Provisioning module subscriptions for single instance per managed server = 7x300 = 2100

Number of Management module subscriptions for single instance per managed server = 7x300 = 2100

Number of Provisioning module subscriptions for unlimited virtual instances per managed server = 3x300 = 900

Number of Management module subscriptions for unlimited virtual instances per managed server = 3x300 = 900

Exhibit 9 (continued)

Overall SUSE Manager pricing

Subscription	Quantity	Price	Amount
SUSE Manager Server	1	US$ 13,500	US$ 13,500
SUSE Manager Proxy Server	10	US$ 2,500	US$ 25,000
Provisioning module (single instance per managed server)	2100	US$ 96	US$ 201,600
Management module (single instance per managed server)	2100	US$ 96	US$ 201,600
Provisioning module (unlimited virtual machines per managed server)	900	US$ 192	US$ 172,800
Management module (unlimited virtual machines per managed server)	900	US$ 192	US$ 172,800
Total deal size			US$ 787,300

Exhibit 9 (continued)

Red Hat Satellite pricing

Red Hat Satellite Server subscriptions required = 1

Total number of Red Hat Satellite Proxy subscriptions required = number of geographical locations = 10

Number of managed systems for each Proxy = 300

Number of Smart Management subscriptions for single instance per managed server = 7x300 = 2100

Number of Smart Management subscriptions for unlimited virtual instances per managed server = 3x300 = 900

Overall Red Hat Satellite pricing

Subscription	Quantity	Price	Amount
Red Hat Satellite Server	1	US$ 13,500	US$ 13,500
Red Hat Satellite Proxy Server	10	US$ 2,500	US$ 25,000
Smart Management (single instance per managed server)	2100	US$ 192	US$ 403,200
Smart Management (unlimited virtual machines per managed server)	900	US$ 576	US$ 518,400
Total deal size			US$ 960,100

Exhibit 9 (continued)

Deal Comparison

Total deal size with SUSE Manager = US$ 787,300

Total deal size with Red Hat Satellite = US$ 960,100

In this case, the SUSE Manager solution offers approx. 18 percent cost savings when compared with a Red Hat Satellite deployment in an identical environment.

Exhibit 10 – Stage-Gate evaluation framework

#	Criteria	Description	Required content level at each Stage-Gate model gate				
			Concept	Feasibility	Interlock	Launch	GA
1	Strategic Alignment and Importance	Fits strategy, important to do, high impact on business	Complete	Update	Update	Update	Update
2	Market Attractiveness	Attractive market size and growth, target customers well understood		Advanced Draft	Complete	Update	Update
3	Competitive Advantage	Sustainable differentiation exists to give a unique customer benefit		Draft	Complete	Update	Update
4	Technical Competence	Ability to build the product or service, either a small technical gap or uses in-house technology		Draft	Complete		
5	Route-to-Market (RTM)	Ability to execute business plan in all aspects of RTM		Draft	Advanced Draft	Complete	Update
6	Resource Capacity	Resources exist to both develop and go to market		Draft	Complete	Update	Update
7	Financial Reward	Revenue opportunity is attractive		Advanced Draft	Complete	Update	Update
8	Risk Management	Not too risky or difficult to achieve business plan		Draft	Complete	Update	Update

Exhibit 11 – Business Case Template

Ship Project SUSE Manager into the _____ market with a Launch date of _____

The strategic intent of the project is to _____

Customers will purchase this because of the following reasons: _____

This product offers the following functionality: _____

It solves the following customer needs _____, better than the following solutions _____

The overall RTM strategy is _____

The offering will be priced at _____

It will improve partner/channel recruitment/engagement because the product offers _____

Product will drive _____ new revenue by FY _____

The product will cost _____ headcount to produce and maintain

Key risk factors include _____

Exhibit 12 – SUSE Manager SKUs compared to Red Hat Satellite's

Red Hat Satellite SKUs	Pricing (US$)	Corresponding SUSE Manager SKUs	Pricing (US$)
Satellite Server	13500	SUSE Manager Server	13500
Satellite Proxy Server	2500/proxy	SUSE Manager Proxy Server	2500/proxy
Satellite Server for up to 50 managed servers	4999	-	-
Smart Management (single in-stance per managed server)	192	Provisioning module (single instance per managed server)	96
		Management module (single in-stance per managed server)	96
Red Hat Monitoring (single in-stance per managed server)	96	Monitoring module (single instance per managed server)	96
Smart Management (unlimited virtual machines per managed server)	576	Provisioning module (unlimited vir-tual machines per managed server)	192
		Management module (unlimited vir-tual machines per managed server)	192
Red Hat Monitoring (unlimited virtual machines per managed server)	288	Monitoring module (unlimited virtual machines per managed server)	192

About this Case

This teaching case was taken from the Product Management by Case collection, a collection of free cases for teaching product management, available at http://pmbycase.com.

Conceptual guidance and teaching notes are available to lecturers. To receive those, please send an email to case-requests@group.riehle.org or dirk@riehle.org.

Case Copyright

Case Credits

Contributions by Abhinav Puri, Dirk Riehle.

Copyediting by Grace Ting, FAU Sprachendienst, Dirk Riehle.

Case Data

Short code: Case-2017-01-SUSE-Manager

Case license: CC BY SA 4.0

Case revision: 191126

More Cases

Case 2012-01:   Ensuring innovation at Method Park

Case 2013-02:   Two-sided markets at Netdosis

Case 2014-01:   User experience design at Immowelt

Case 2014-02:   Switching suppliers at Nokia

Case 2014-03:   Specifying 'wow!' at Elektrobit

Case 2016-01:   Licensing choices at ownCloud

Case 2016-02:   Stock options at Caldera

Case 2016-03:   Hard software marketing choices at ownCloud

Case 2016-04:   Pricing at Everest SARL

Case 2017-01:   The case of SUSE Manager