EXECUTIVE SUMMARY

Previously we have established that Netflix should establish the business objectives of maintaining its market lead in video streaming, expand its high-quality programming collection, and establish Netflix as a primary entertainment choice for media consumers. To do this they must continue to expand their portfolio by fostering long-term relationships with content suppliers, securing more sustainable content distribution methods, disintermediate their content supply by developing more original content, and use competitive intelligence to explore new sources of original content and upcoming media device releases.

An analysis of Netflix’s internal position demonstrates strong core competency in information systems and technology innovation and implementation, and could strongly benefit from an end-to-end content tracking system that would satisfy several critical success factors. Externally, they have the opportunity to expand their device penetration and reliable content delivery through the development of a competitive intelligence tool to probe for new device releases as well as a more diverse delivery system. Finally, a review of Netflix’s internal applications reveals that improved cryptographic systems could help to prevent piracy and protect user data, making better partners with content suppliers and users alike.

INTRODUCTION

Netflix position as market leader is driven by their creative use of information systems and technology to differentiate themselves from others. Their competitors and new entrants to the market, many with deep pockets, are attempting to catch up with them in the digital streaming market, however. To preserve their market lead, achieve their goals of gaining high quality content and becoming a primary media viewing option, Netflix must continue to innovate and evolve, leveraging their IS and IT competencies to solidify their lead and overcome the various obstacles that currently constrain them.
They are positioned in an interesting dynamic market, where other businesses maintain positions as suppliers, distributors, substitutes, new entrants and direct competitors. Bidding wars for content and reluctance from ISPs keep up pressure from both ends of the extended supply chain as Netflix seeks to replace the cable television market with their own. This is an examination and analysis of Netflix’s internal and external opportunities for implementing business-driven IS and IT solutions to secure their market lead, improve their programming quality and distribution, and maintain their already innovative technological gap over their competition.

SECTION 1: EXTERNAL ANALYSIS

INCREASING AND SOLIDIFYING MARKET LEADERSHIP

Currently Netflix stands above all competitors in the digital streaming market. While they maintain the market lead, the persistence of competitors and the emergence of
new entrants into the video streaming market appear to be a threat that will not disappear in the short term. If Netflix is to remain the market leader in digital video streaming, it must continue to innovate its product offering through the effective evolution of its IS and IT solutions.

Within the market, differentiation and business intelligence, hand in hand, will be the key to success. Netflix has already made great strides with its savvy user interface and personalized recommendations based on user movie ratings and viewing habits. However, complacency in these areas will allow competitors to eventually mimic their product and capture their market. Netflix must use IS to differentiate their product even further, and enhance their hold on market users by leveraging business intelligence.

Increased Platform Penetration

While Netflix’s market presence is high, it still remains confined to Internet-enabled devices. Currently, however, not all devices use an identical Netflix package. Establishing a common, cross-platform API for computer, tablet, smart TV and smartphone manufacturers to use will help to increase both the range of devices that can use Netflix out-of-the-gate and the speed with which they can be integrated by developers of those devices. Increasing device penetration will increase market exposure and the number of available points of entry, making Netflix a more constant presence in potential customers’ worlds.

Further development of a common API could also facilitate a disruptive intrusion into the cable TV world. Netflix has already begun exploring the possibilities of a presence through either a cable channel or a video-on-demand option. The development of an IS solution to efficiently merge current-format content and delivery systems with the requirements of a cable channel provider will reduce time-to-release by avoiding content conversion costs and the time required to arrange content for television distribution (for on-demand). A diversified delivery system will allow Netflix to make the same content available across all platforms as soon as it is available within the content system.

If Netflix can achieve this objective, they will have successfully differentiated themselves from much of their competition by offering an unprecedented quantity of options online while offering a similar amount on television. This will place them as a direct competitor to HBO and Comcast (among other cable providers that may offer streaming video as well), offering more content than HBO and a far lower price point than cable companies. Online-only competitors such as Amazon and Hulu will be faced with one more differentiated feature that they must fight against, and the increased potential audience may make Netflix a more attractive option in the content bidding wars.
Enhanced Personalization

Though Netflix already offers strong personalized recommendations through its current IS systems, they must find ways to target and lock in the younger demographic where they already have a strong presence. Information provided to Netflix by customers has its limits; this can be enhanced by developing interfaces with other data sources to develop better customer profiles. By stepping up the development of an IS system to push users to voluntarily and legally link with their Facebook, Google, Twitter or LinkedIn accounts, Netflix can access or exchange data that will unveil more personal details about their customers. They can then leverage that information to refine their personalization features, targeting younger customers with the right content and also verifying that the content they have is reaching the right audiences. Because they are already strong in this area, however, it may take lesser priority than other potential projects.

IMPROVING THE SUPPLY AND DISTRIBUTION CHAINS

Most of Netflix’s challenges are found in the battle to acquire content and the struggle to deliver that content to its customers. They have already made inroads into both their supply and distribution issues through the financing of exclusive original content and the introduction of Open Connect to facilitate ISPs transmitting high-fidelity content. Still, it is these barriers that present the greatest threat to the continued growth and expansion of Netflix.

Netflix’s strongest solutions for these challenges are the use of strategic alliances and disintermediation to find ways through and around the boundaries of the current model. Expanding alliances with both content providers and ISPs will ease the burden of getting content and delivering it. More opportunity is present in disintermediation, since it somewhat avoids the tangles of negotiating with third parties. Finding ways to source content or deliver content without the obstacles of large studios or ISPs will be difficult but may prove more fruitful in the long term.

Development of Content Portals

One of Netflix’s most recent successes has been their foray into the development of original content. Several of their productions have generated a high media profile and critical acclaim. A possible way to build on that success is to develop an open web portal for smaller, independent content creators to confidentially submit spec scripts, storyboards and drafts for Netflix’s consideration. Netflix could then sift through the submissions in search of a good original idea to finance and produce for their exclusive use. The submission criteria should be high in terms of the materials submitted (e.g. full pilot script, storyboards, production notes) so that the inputs are not overwhelming, but also establishing the interface for uploading the materials, signing off on the
confidentiality and exclusivity, and the interface for reviewing and assessing the materials should be given the same level of care that Netflix’s current sleek user interface has received. The result of this application would be to circumvent some of the costly bidding wars for both old and original content, disintermediate the studios to some extent, and find “diamonds in the rough” that may be engaged for a much lower licensing fee.

The existing Content Partner Portal could also be enhanced to offer direct integration into strategically allied content providers’ repositories, automating content conversion and input into the AWS cloud and Open Connect. This would effectively shorten the distance between supplier and end-user, and could avoid any costs of manual conversion allowing more of those resources to be applied to licensing the content. It would also make transferring the content easier on the suppliers, who, depending on the nature of the interface, could very simply transfer the licensed content and begin the automated process.

Development of Alternative Distribution Methods

As discussed previously, ISPs present a major obstacle to Netflix’s growth due to the friction caused by the massive bandwidth requirements of video streaming and the emergence of ISPs as competitors in the streaming market. While Open Connect is an optimal system for establishing alliances and easing this burden on ISPs, many seem reluctant to indulge Netflix in this solution. So alternative ways around these stumbling blocks must be found to ensure that the high-definition product that Netflix produces can find its way unencumbered to its customers.

One solution, mentioned earlier, is to expand into the substitute market of cable through the development of a cable channel and/or video-on-demand platform. An IS system, possibly using a standardized API, should be developed to channel the data from current storage systems to the new distribution method, which would use the more ample cable-allocated bandwidth rather than the clogged data bandwidth. This would expand Netflix’s presence to a much larger device pool: normal televisions. It would also allow content to be presented in full high-fidelity and with no packet loss to worry about.

Another possible solution is the development of a Netflix-dedicated caching system such as an application or flash drive that would allow customers to download anticipated content during non-peak hours for viewing at any time. Selection of the anticipated content would rely on user-controlled selection as well as the recommendation engine. Its implementation may be traded with ISPs for increased adoption of the Open Connect system, allowing Netflix’s customers to benefit from both the pre-caching of video and the improved consistent high-definition and high-fidelity content that they expect.
EXTERNAL ANALYSIS CONCLUSIONS

Critical Success Factors:
1) Optimize Efficient and Effective Delivery of High-Fidelity Content
2) Improve High Quality and Desirability of Original Content
3) Improve Out-Of-The-Gate Presence on all Internet-Enabled Devices

Table 1: External scoreboard analysis of potential IS/IT applications and how they fit into the CSFs

<table>
<thead>
<tr>
<th>CSF Priority</th>
<th>CSF 1</th>
<th>CSF 2</th>
<th>CSF 3</th>
<th>Unweighted Total</th>
<th>Weighted Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common API</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Streamlined interface into cable/video-on-demand systems (diversified delivery system)</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>22</td>
<td>176</td>
</tr>
<tr>
<td>Data sourcing with American social networks</td>
<td>9</td>
<td>5</td>
<td>9</td>
<td>24</td>
<td>207</td>
</tr>
<tr>
<td>Enhanced Content Partner Portal</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>15</td>
<td>132</td>
</tr>
<tr>
<td>Content submission portal</td>
<td>10</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>140</td>
</tr>
<tr>
<td>Caching application/device</td>
<td>10</td>
<td>3</td>
<td>7</td>
<td>20</td>
<td>183</td>
</tr>
</tbody>
</table>

Set against the prioritized critical success factors for Netflix, two opportunities for IS solutions stand out. The first is the development of an interface to allow Netflix to deliver content via standard cable television, either as a channel or on-demand. Not only does this allow them to penetrate the substitute market of cable providers, but it also bypasses the obstacles of bandwidth constraint and ISP reluctance to adopt Open Connect. Download speed and packet loss will be non-existent in this delivery system, and will serve to diminish the strength of ISP distributors in the 5-force analysis. This addresses the first CSF by optimizing delivery of full-fidelity content, and the third CSF by greatly expanding the number of enabled devices, though through cable rather than data streams.

The second potential external solution is the implementation of a pre-caching application or device that can download content during off-peak hours. By downloading gradually and off peak times, download speeds will be improved and packet loss will be a non-issue, making this a strong solution for the delivering high-fidelity content optimally, the first CSF. While less impactful on the third CSF, offering a pre-caching device or application could allow some Internet-enabled devices that do not currently have the bandwidth capacity for actively streaming to participate in the Netflix experience by pre-downloading content. Older smartphones and dial-up-connected computers would then become potential customers as well.
SECTION 2: INTERNAL ANALYSIS

Netflix strives to make internal processes as efficient as possible by utilizing advanced technology. The company is built upon good software engineering practices that leverage a large amount of external systems and processes to deliver content to the consumer in the best possible way. Core to Netflix’s business is the ability to optimize content delivery and serve their customers with every available option for viewing TV shows and movies. Acquiring content is important to the overall success of the business but for the purposes of this internal analysis we will be focusing on IS/IT application within the company.

INTERNAL IS/IT CORE COMPETENCIES

Optimizing efficient content delivery is integral to Netflix. The software that the company develops is on the cutting-edge, meaning they’re making tools from scratch to support the innovative ways they do business. Many of the software applications they develop are focused on vetting inefficiencies in manual processes within the company to improve cycle time and increase process insight. Being able to automate a process is the first step in leveraging information systems but, at the core, allows Netflix to do more with less resources thus giving them a competitive advantage when it comes to managing gains in technical achievements. The nature of their business is 24/7 and doesn’t stop when employees go home for the day. This means that the IS/IT tools they build must be robust and largely autonomous, running without human interaction.

One of Netflix’s greatest strengths is the content that they have available. Additional IS/IT changes that enhance this could be the development of a frontend interface for potential customers. This portal will familiarize customers with the Netflix process of content delivery and allow them to securely send data rather than relying on traditional hard storage devices delivered through the mail. Additional information about existing customers and viewing trends among their subscribers could be integrated, providing a portfolio of potential markets content providers have access to.

A particular application used by Netflix called Chaos Monkey focuses on improving software by simulating outages at various levels of their network infrastructure. Initial reactions to this application might not be seen as beneficial to the company but Netflix uses this to their advantage. The simulation allows Netflix to identify gaps in their software functionality and automatically fix them before they happen. This proactive approach to identifying issues is what allows Netflix to maintain high quality content delivery no matter what bumps they encounter. Other tools aimed at continuous deployment and delivery of code changes related to feature enhancements and better internal workflow management also help enhance their content services. The idea behind the continuous improvement pushes Netflix to meet customer demand and also minimizes risk through smaller and faster software cycles. Through the use of Chaos
Monkey to address software issues and the ideas behind continuous deployment and delivery to enhance code, Netflix is positioning themselves to enhance long-term sustainability through a robust suite of software.

The information technologies developed at Netflix are transforming the way information is used to improve business functions. Recommendation systems, off-hour data analysis for viewing trends, and internal performance metrics across their servers and data storage facilities are just a few ways information is used as an advantage. Combining each service builds a better understanding of what the customer wants, by looking at pauses, stops, and start during viewing, preloading content based on past viewing trends, and by applying KPIs to better manage the business. This mentality is part of their strategic goal to better serve the customer in every aspect.

Potential for new customers is an area that is constantly at the forefront of digital media streaming. Further refinement of recommendation and the building of “channels” within their content offering can focus on additional demographics outside of their current base. Children are consuming content more these days on digital devices and as a result of this growing market Netflix recently added a “Just for Kids” content interface. Allowing kids to easily navigate, select their content, and watch it on a unique channel they create would increase overall customer satisfaction. Additional sharing tools will allow kids to watch what other kids watch to enable a social aspect of viewing media. International markets will increase the potential for differences in content viewing an organization. Adding customization to the interface can personalize Netflix offerings and present them in unique ways adding to a new level of content differentiation.

While traditional ISPs are a threat to Netflix, recent developments might suggest that a partnership between the competitors is in the works. Netflix will need to improve their CDN network and build additional UIs for this potential partnership. Changing the way they allow traditional cable viewers to access their content alongside live TV opens the doors to interesting new ways to consume media. Netflix can build overlays that suggest content for previously viewed live TV so that if you want to continue watching media of the same nature it would only be a click or button push away. This new area of business would vastly increase the potential customer base with the ability to bundle linear TV with Netflix’s content library into one fee.

**VALUE CHAIN ANALYSIS**

Netflix is in a unique position in their product-market. To continue their success they will need to implement new IS/IT strategies to keep up with every changing digital trends in media consumption. A value-chain analysis will help us to assess important areas that will benefit most from new IS/IT applications.
In performing this value-chain mapping we used the assumption that the three most important CSFs shown below would lead us to identifying KPIs and ultimately areas of enhancement for IS/IT changes.

**CSFs**
- CSF 1: Optimize Efficient and Effective Delivery of High-Fidelity Content
- CSF 2: Improve High Quality and Desirability of Original Content
- CSF 3: Improve Out-Of-The-Gate Presence on all Internet-Enabled Devices

**KPIs**
- Percent of Subscribers Covered by Open Connect System (1)
- Mean and Median Download Speed of High-Definition Packets (1)
- Average Packet Loss (1)
- Percent of Original Titles/Episodes Viewed by 10 Percent of Subscribers (2)
- Percent of Original Titles/Episodes Viewed Multiple Times by 10 Percent of Subscribers (2)
- Number of Emmy Nominations and Wins for Original Titles/Episodes (2)
- Percentage of New Internet-Enabled Devices Released With Netflix Access Installed (3)
- Percentage of New Internet-Enabled Devices Released With Netflix Access Available (3)

**Critical Business Processes & Information Systems**
- Record viewing statistics for content
- Record impact of “Originals” on viewing consumption over subscriber base
- Assess coverage for digital devices and improve adoption rate and availability
· Track bandwidth allocation throughout network and scale appropriately
· Address networking infrastructure requirements and changes during errors and loss
· Record Open Connect statistics and increase adoption and deployment

Working our way from CSF > KPI > Potential IS/IT application we performed a scoreboard analysis to see how each proposed fit into the business need.

**Table 3: Internal scoreboard analysis of potential IS/IT applications and how they fit into the CSFs**

<table>
<thead>
<tr>
<th>Netflix Scoreboard Analysis</th>
<th>CSF 1</th>
<th>CSF 2</th>
<th>CSF 3</th>
<th>Unweighted Total</th>
<th>Weighted Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF Priority Rating (out of 10)</td>
<td>10</td>
<td>8</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Assess coverage for digital devices and improve adoption rate and availability</td>
<td>8</td>
<td>4</td>
<td>10</td>
<td>22</td>
<td>180</td>
</tr>
<tr>
<td>Address networking infrastructure requirements and changes during errors and loss</td>
<td>8</td>
<td>5</td>
<td>7</td>
<td>20</td>
<td>154</td>
</tr>
<tr>
<td>Record impact of “Originals” on viewing consumption over subscriber base</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>20</td>
<td>130</td>
</tr>
<tr>
<td>Track bandwidth allocation throughout network and scale appropriately</td>
<td>9</td>
<td>4</td>
<td>6</td>
<td>19</td>
<td>148</td>
</tr>
<tr>
<td>Record Open Connect statistics and increase adoption and deployment</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>18</td>
<td>142</td>
</tr>
<tr>
<td>Record Viewing Statistics for Content</td>
<td>7</td>
<td>3</td>
<td>6</td>
<td>16</td>
<td>128</td>
</tr>
</tbody>
</table>

Table 3 shows critical IS/IT applications that support our strategic business needs. The table has been sorted to show the most important application on top. The exercise allows us to see how several applications can address many different CSFs.

**VALUE CHAIN DISCUSSION**

Many of the application in our analysis show a need to gather data across the value-chain and the need to constantly poll our subscriber base. In the case of the top IS/IT application, there is a push to understand trends in the product-market. When discussing the impact of “Originals”, which is Netflix's version of original content produced exclusively for them, the tracking of Open Connect CDN, adoption, and bandwidth allocation, we’re really pushing for increase information integration across the content acquisition, processing, and delivery aspects of the value-chain. Support services already in place perform some of this analysis now. An IS/IT tool that combines information from these areas would strengthen our ability to manage the business.
Netflix already has key IS/IT applications in place that manage infrastructure requirements. Their Asgard system, which simplifies cloud management, provides a central repository for real-time infrastructure requirements. The system automatically responds and adjusts cloud load balancing needs to make sure things are running smoothly. This application touches upon the need to track bandwidth allocation and scaling but also touches upon the network infrastructure when looking at the operations segment of the value chain.

By looking beyond addressing the concerns of the top IS/IT application, we propose that we have an end-to-end application that follows content from acquisition through delivery. This application would cover many of the CSFs and allow us to integrate information throughout the value chain. Bringing product sales of tablets and other internet connected devices into a centralized view, we can combine data and look for potential trends. Knowing that a new tablet is all the craze and that a growing portion of our subscriber base is using tablets would make sure we have our application ready to go before or soon after the product launches. This theory of knowing what’s coming in an up and coming industry leads to some understanding of competitive intelligence. Keeping abreast of technology trends through patents and news articles would give us greater insight into where our resources should be focused.

INTERNAL SUMMARY

Netflix’s unique position in their product-market and their solid foundation of software development allows them to be flexible to changing business trends. They’re able to support themselves in many ways traditional businesses cannot and rely heavily on automation of manual tasks and advanced information management systems. Utilizing the strength of their content, they’ve pushed other areas of their value chain, content processing and delivery, to cloud services that largely run autonomously. This frees up resources to address critical success factors in their business processes.

With the introduction of integrated information flow across their value chain, Netflix can leverage competitive intelligence and make better informed decisions where to allocation resources. Existing tools like Asgard, Chaos Monkey, etc. provide support for the primary segments of the value chain and reduce the load on change required to meet market demands. Looking deeper into the application portfolio will expose any weaknesses in the current software offerings and provide increased business productivity and information flow.
SECTION 3: APPLICATION ANALYSIS

Table 3: Netflix application portfolio grid analysis

<table>
<thead>
<tr>
<th>High</th>
<th>Strategic</th>
<th>High Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>()Play back UI</td>
<td>()HTML 5</td>
<td>()Ice</td>
</tr>
<tr>
<td>()NfWebCrypto</td>
<td>()Mobile</td>
<td>?Cable Box Service</td>
</tr>
<tr>
<td>*Isthmus</td>
<td>*Hadoop</td>
<td>*Netflix API</td>
</tr>
<tr>
<td>*Pig</td>
<td>*Pig</td>
<td>*Genie</td>
</tr>
<tr>
<td>*Lipstick</td>
<td>*Lipstick</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>KEY OPERATIONAL</td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key * Existing system is satisfactory ( ) Existing system needs improvement ** Planned system ? Potential system

Applications

**HTML 5 Play back UI**: The outside interface that user sees and the content is delivered through. Built in-house the successor to Silverlight. This is a critical strategic element because the quality of the viewing interface can be the difference between a client choosing Netflix or another online streaming service.

**NfWebCrypto**: Combination of W3C spec and in-house polyfill. It has high potential to be an area of improvement. But currently it is to standardized it does not give Netflix much of an edge.

**Isthmus**: This is a very important application that manages the fault tolerance of the system. It is a level just above the AWS which allows Netflix to quickly redirect their system if a portion of the AWS fails. One of Netflix’s strongest strategic assets because it allows them to get the most out of the AWS and avoid outages.

**Ice**: Is an application that allows Netflix to monitor usage by all elements of their IS chain in real time. This also allows them to provision their cloud resources in order to avoid outages

**Mobile**: Netflix’s mobile apps on phones and tablets are very strong. But it is important to keep pace with changing devices/os’s.
Netflix API: Integration hub that connects device UI's to distributed data services. One of the most critical support Apps.

Hadoop, Pig, Lipstick: These three apps are really all of a piece. Hadoop is the underlying distributed data management service that powers Netflix's library. Pig is tool that allows Netflix developers to reuse Hadoop libraries and move them through the data cloud. Lipstick is the UI tool for visualizing data flows in Pig. They are key operational elements for Netflix and they are ones they are constantly tinkering with but

Genie: Genie is also related to the Hadoop eco-system. In much the way ice allows Netflix to apportion the AWS Genie allows Netflix to apportion jobs in Hadoop. This is a critical support application.

Cablebox Service: This is a current proposal to make Netflix an option on digital cable boxes. It has high potential to open up a whole new market to Netflix.

GAP REVIEW

The biggest gap in the portfolio is that Netflix relies on the AWS. While currently the relationship between Amazon and Netflix is healthy Amazon’s Prime streaming service is a major competitor to Netflix. A challenge for Netflix will be to develop alternative delivery infrastructure. This can be seen in the most recently reported plan to have Netflix to be a “channel” on digital cable systems. If Netflix wants to grow, it will be necessary to increase the diversity of their delivery system both to make sure they are a viable option for as many customers as possible and to increase the stability and fault tolerance of the system.

APPLICATION DISCUSSION

The three new systems to develop are all enhancements on prior systems: developing an in-house top flight cryptography, perfecting a playback system that integrates with all platforms and diversifying the delivery network so it is robust and so is can deliver to all platforms.

Netflix’s playback is one of their most important areas. Most people are interested in the quality and variety of streaming options. With HTML5 becoming the new industry standard Netflix transitioned from Microsoft Silverlight to building their own in house HTML 5 player. Silverlight has been a little bit buggy for a little while and hasn’t integrated with all web browsers. The challenge is to plan ahead and make sure their player

The second important area to plan ahead is in the area of cryptography and security. Currently Netflix uses the cryptography specifications developed by W3C with their own in house polyfill. Currently the cryptography standards are still in their draft stages. The
The challenge for Netflix is to develop a top flight cryptographic system which will protect users’ data without putting an unbearable strain on the system.

As we have mentioned most people want a good variety of selections that are reliably available. In terms of reliability the most important is the delivery infrastructure. Netflix needs to develop the ideal system for delaying with tensions with telecoms. The future will likely be some kind of hybrid model between over the web and through the cable box. This will be a challenge for the Netflix API because being a channel in the tv will require a completely different architecture to integrate with the Netflix’s other apps.

Table 4: Applications scoreboard analysis of potential IS/IT applications and how they fit into the CSFs

<table>
<thead>
<tr>
<th>CSF1</th>
<th>CSF2</th>
<th>CSF3</th>
<th>Unweighted Total</th>
<th>Weighted Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating out of 10</td>
<td>8</td>
<td>10</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Top flight Cryptography</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Playback</td>
<td>9</td>
<td>9</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Diversify the Delivery System</td>
<td>10</td>
<td>6</td>
<td>8</td>
<td>24</td>
</tr>
</tbody>
</table>

CSF1 = Optimize Efficient and Effective Delivery of High-Fidelity Content  
CSF2 = Improve High Quality and Desirability of Original Content  
CSF3 = Improve Out-Of-The-Gate Presence on all Internet-Enabled Devices

APPLICATION SUMMARY

The IS apps of Netflix supports Netflix’s business completely because the apps basically comprise the business. Most of their most important apps deal with properly apportioning resources both in terms of grid uses and data cluster uses. Long term Netflix needs to focus on the reliability and quality of their content. Their focus needs to be on developing their apps that deal with infrastructure and increasing availability in all contexts (including cable television). This will create a greater strain on Netflix’s API and cryptographic app’s.
SECTION 4: BUSINESS CASE AND IS ROADMAP

Aligning enhancements to the application portfolio as well as focusing on important aspects of the value chain where IS/IT can applied will maximize impact to the overall business strategy and vision. In order to understand what our area of focus will be we’ve used the scoreboard analysis from both the internal and application analysis to develop four potential improvements list below.

PROPOSED IS/IT ROADMAP APPLICATIONS

1. CRIE - Customer Relationship Information Engine, gathering information to show the process of content acquisition through delivery in real-time so that content producers can see the impact they have on Netflix subscribers.

   a. Mission and goals: Enhanced customer relationships fortify long lasting content acquisition. Combining traditional CRM with advanced information gathering techniques from Netflix’s consumption statistics will provide a complete womb-to-tomb view of the impact a TV show or movie has on the subscriber base. This application is good for two reasons: it allows the customer to have direct understanding of their performance on Netflix’s platform and gives Netflix a consolidated view of what content providers impact is and some insight into whether or not the customer is satisfied. Centralizing data throughout the value chain in one ensures long term business relationships and keeps content coming.

   b. Business Vision and Incentives: Every aspect of the business is impacted by this application change, from customer management to content delivery and consumption. The key incentive is to merge CRM with existing consumption information to provide a one stop shop for overall business management. Integration throughout the value chain will bring the provider closer to the customer aligning with the long term potential for a B2B model. Measuring customer feedback through the development and deployment of this application would be a good KPI.

   c. IS strategy: Tools to manage customers are already in place as Netflix has a portal for customers to upload their content securely. Additionally, tools like ICE break out consumption by account and region providing a high level view for effective management. A bridge between the two would give the customer greater insight into overall media impact.

   d. Value network: Care must be taken to provide enough insight for customers while still maintaining some control over the data. There will
need to be a joint understanding between various departments and increased training and guidance when using the new system. This will be a very powerful tool but with great power comes great responsibility.

2. **CIA - Competitive Intelligence Application**, integrating what consumer trends are compared to their consumption on specific devices.

   a. **Mission and goals**: The development of a competitive intelligence engine fits into our content delivery and out-of-the-gate performance for emerging technology. Being able to have day-one readiness of our application on a popular tech device will increase our market presence and overall subscriber base. Associating trends with the increase in subscribers and the adoption and consumption percentages of media on new devices would make great KPIs.

   b. **Business Vision and Incentives**: Engineering, marketing, and business administration will need to be tied into these new processes in order to functionally establish a working outline of the program. A combination of these business disciplines will ensure a greater likelihood of success through close analysis of information data flows from the new application.

   c. **IS strategy**: Data mining services will need to be developed that look outside of the company, whether it’s in tech blogs, patent filing database, etc. and compile data into information that can be reviewed by the new work group. There are a number of aggregating services in existence and with Netflix’s involvement in crowdsourcing it shouldn’t be much of a challenge for them to accomplish this IS development.

   d. **Value network**: With the Amazon partnership already in place (Amazon Web Services), additional collaboration could help form a lucrative working relationship when it comes to competitive intelligence analysis and data mining. Amazon is known for identifying market trends in their business and is a competitor in the hardware market with their Kindle products. Identifying what pressures they’re up against and trends they see in business would provide a great idea on where to focus application development.

3. **Diversified Delivery System**

   a. **Mission and goals**
   In terms of delivering quality content there is nothing more important than the reliability of the delivery infrastructure. A diversified system is a more robust and fault-tolerant system. By using multiple carriers and
infrastructures, Netflix will be better positioned to absorb the loss of one part of the system.

b. **Business Vision and Incentives**
   Netflix wants to be ubiquitous on all platforms. A delivery service capable of integrating with mobile, Internet and cable-enabled devices will make them a viable option to all customers. Some users may not have mobile platforms and will be more likely to use Netflix if it is an option on their cable box.

c. **IS Strategy**
   A diversified system will also increase the reliability of Netflix delivery. They have already shown with their Isthmus app the ability to shift capacity as needed. By having a more diversified grid a tool like Isthmus can shift capacity between networks based off conditions within regions.

d. **Value network**
   This will be a political and business challenge. The biggest limitation for Netflix right now is the speed and bandwidth available to them. A diversified system with emphasis on cable will allow them increased speed and reliability into more households. However this will require negotiating with the same telecoms that are limiting their bandwidth now. The hope is that by inserting Netflix as a channel it will help cable providers’ subscription rates and will encourage them to be friendlier to Netflix in other areas.

4. **Top Flight Cryptography**

   a. **Mission and goals**
   Netflix deals with much personal information. It is very important that members be able to retain their privacy. Also, secure systems will protect Netflix from outside attacks that could destabilize their network.

   b. **Business Vision and Incentives**
   As Netflix solidifies itself as a company that not only streams but develops content, cryptography can help prevent piracy. If Netflix can ensure the exclusivity of the content they purchase as well as develop it will help them build a large subscriber list that rely on Netflix for their preferred content.

   c. **IS strategy**
   Netflix seeks to be ubiquitous across all platforms and devices. By developing in house their own top flight cryptography that can interface
with any system Netflix can ensure that they are prepared to offer fast secure transmission.

d. Value network
Because Netflix is hosted on so many platforms their cryptography must be able to integrate with all OS’s. They will need to retain good relationships with all development companies in order to assure that there are no hiccups in terms of Netflix integrating with new upgrades.

IS ROADMAP SUMMARY (SEE APPENDIX A)

Each proposed application strengthens the existing business model and positions Netflix to compete more effectively in their product-market. As the industry leader they must be on the cutting-edge, always improving and looking for new trends. None of these enhancements to their portfolio would be achievable if it wasn’t for their success in developing Netflix OSS. The push for crowdsourcing has opened the door to massive leaps in technology in a short amount of time. Bringing together applications that integrate information across their value chain is a manageable undertaking for Netflix. Addressing weaknesses in customer management, content delivery, and infrastructure security ties into Netflix’s critical success factors. These applications integrate information throughout the value chain and provide long term strategic and operational excellence that will continue Netflix’s reign as market leader.

SUMMARY

In order for Netflix to maintain its market leadership in the digital streaming market, it must take advantage of its core competencies in innovative IS and IT development. To alleviate pressures from bidding wars for content, Netflix can leverage a Customer Relationship Information Engine to allow content providers greater insight into the consumption of their licensed products, further incentivizing forming stronger partnerships with them. The obstacles to distributing high-fidelity content to users can be overcome by crafting an all-purpose Diversified Delivery System ready to provide painless interface into multiple platform devices that may extend beyond the usual ISP routes. A Competitive Intelligence Application will alert Netflix to upcoming devices prior to their development and release, ensuring maximum success in adoption of Netflix viewing applications throughout the device population. Finally, a top-flight cryptography system will bolster security and anti-piracy measures across all devices, both fostering better relationships with content providers and ensuring a secure platform across an ever-expanding array of devices.
REFERENCES
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GROUP CONTRIBUTION
- J.G. McMillan wrote the following:
  - Executive Summary, Introduction & Summary
  - Section 1: External Analysis
  - Appendix A – IS Roadmap
- Alex Camara wrote the following:
  - Section 2: Internal Analysis
  - Section 4: Business Case & IS Roadmap
- Matt Lyke wrote the following:
  - Section 3: Application Analysis
APPENDIX A – NETFLIX IS ROADMAP

NETFLIX IS ROADMAP

**Priority 1**
- Ensure Delivery of High-Fidelity Content

**Priority 2**
- Improve High Quality of Content

**Priority 3**
- Improve Out-Of-The-Gate Presence on Devices

**Priority 4**
- Combination of CSFs 1 & 3

**Missions & Goals**
- Ensure delivery of high-fidelity content
- Improve high quality of content
- Improve out-of-the-gate presence on devices
- Combination of CSFs 1 & 3

**Value Network**
- Set up Diverse Delivery Team
- Set up customer Info, mgmt. team
- Collaboration between Eng, Mktg & Bsm, Admin, possibly Amazon
- Coordinate software eng. With OS developers

**Strategy**
- Expand Istmus application, create Diverse Delivery System
- Integrate Content Portal with ICE through new CRIE
- Develop external data-mining tools for upcoming devices
- Develop in-house cryptography protocol

**Vision & Incentives**
- Extend content to other platforms
- Integrate CRM, BI and Content Acquisitions processes
- Extend software eng. & distrib., Outreach processes
- Improve content delivery speed

**KPIs**
- Improved download speed
- Reduced packet loss
- % Titles with high-viewing rate
- Positive feedback
- % of new devices with Netflix installed or available

See 1 & 3 to left