How Healthy Is Your SaaS Business?
ISVs can’t know for sure unless they apply a structured approach to software-as-a-service performance monitoring. They can apply metrics and indicators that in near-real time reveal true business direction.

Executive Summary
IT trends come and go, but software as a service (SaaS) is here to stay. How independent software vendors (ISVs) respond to subscription-based software services will determine their fate for both the short and long term.

SaaS provides an opportunity for ISVs to create more business value – for themselves and their customers – than traditional business models. No longer are SaaS offerings considered vanilla software applications; they are seen as complex business solutions that span scaffolding hardware, software and services. As such, customer expectations of SaaS vendors have evolved as the ISV now becomes responsible for application service levels. For ISVs, this transition impacts revenue models, cash flow, cost structures, and most business support functions that help sustain and grow the product business (see Figure 1, next page).

In response to market dynamism and to account for the variances from their conventional software businesses, ISVs must embrace a different approach to SaaS performance monitoring. This white paper offers our perspective on the essential elements, metrics and indices ISVs must master to ensure proper business performance monitoring of their SaaS business.

SaaS Business Performance Monitoring: Setting the Objectives
How should ISVs monitor their SaaS business and ensure that it has a clean bill of health? A good approach is to set business objectives first; then develop a set of key performance indicators (KPIs) and measurements that are aligned with these objectives. One important suggestion: Measuring KPIs as a time series yields better insights than drawing conclusions based on a snapshot (see Figure 2, next page).

Business objectives are typically set in three dimensions: growth, cash flow and profitability.

- **Business growth:** This is very critical – especially in the online world, where situational and geographical advantages blur and scale is the only way to sustain revenue growth. There is a clear reinforcement through buzz created in the traditional media and social world, creating a positive feedback loop to propel initial growth momentum into sustainable market leadership. Measure growth by
using a parameter appropriate for assessing real, market-perceived growth: The number of users or subscribers, in most cases.

- **Cash flow:** Simply put, cash flow depends on recurring subscription revenue, the cost of customer acquisition and the cost of services provided. However, this could be more complex, particularly when it involves additional up-front investments in infrastructure or adding and sustaining new complementary products or services, etc.

- **Profitability:** This needs to be analyzed at a customer level (i.e., customer profitability) as well as at the product line or service level (i.e., overall product profitability). In addition, if the cost of services involves a workforce growing in proportion to revenue growth, then profitability at the employee level (i.e., revenue per employee to cost per employee ratio or workforce productivity) is also important.

Apart from the above, ISVs need to set timeline objectives for break-even and a desired level of growth. The key parameters can be monitored as a time series against the objectives set.

### SaaS Performance Monitoring: Defining Measurements

#### Growth Indicators

Net increase in recurring subscription revenue is a direct indicator of growth. However, the business health can only be analyzed accurately if the ISV drills down to the next-level factors that contribute to growth or decline of the business:

### KPI Tracking: An Illustrative View

<table>
<thead>
<tr>
<th></th>
<th>Q1’11</th>
<th>Q2’11</th>
<th>Q3’11</th>
<th>Q4’11</th>
<th>Q1’12</th>
<th>Q2’12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of Lifetime Value to Cost of Acquiring Customer</td>
<td>1.7</td>
<td>1.9</td>
<td>1.9</td>
<td>2.6</td>
<td>3.5</td>
<td>4.7</td>
</tr>
<tr>
<td>Cost of Acquiring Customer</td>
<td>$6,025</td>
<td>$7,876</td>
<td>$8,541</td>
<td>$7,809</td>
<td>$6,880</td>
<td>$6,793</td>
</tr>
<tr>
<td>Monthly Recurring Revenue Churn</td>
<td>3.5%</td>
<td>2.7%</td>
<td>2.8%</td>
<td>2.3%</td>
<td>2.0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Average Monthly Recurring Revenue</td>
<td>$429</td>
<td>$507</td>
<td>$548</td>
<td>$560</td>
<td>$583</td>
<td>$577</td>
</tr>
<tr>
<td>Margin on Software</td>
<td>83%</td>
<td>81%</td>
<td>80%</td>
<td>82%</td>
<td>81%</td>
<td>82%</td>
</tr>
<tr>
<td>Lifetime Value</td>
<td>$10,074</td>
<td>$14,964</td>
<td>$15,919</td>
<td>$20,325</td>
<td>$23,775</td>
<td>$31,806</td>
</tr>
</tbody>
</table>

*Source: HubSpot, a SaaS for all-in one inbound marketing software platform; Published in Forbes (9/13/2012), http://www.forbes.com/sites/jjcolao/2012/09/13/a-dangerous-seduction-revisited-in-defense-of-the-lifetime-value-ltv-formula/.*
increase in recurring subscription revenue depends on the total number of customers and average revenue per customer. Also, related early indicators such as growth in the number of deals and average deal size are essential. This can be complex in some business models where advertising revenue, cross-sell/up-sell, etc., are involved.

lead generation trend (number of leads in the active pipeline) and conversion rate are two parameters that can contribute to improvements made to the total number of customers. Total number of customers, leads and conversions, average revenue per customer and churn rate determine the recurring subscription revenue.

churn rate is one of the most critical indicators of the long-term sustainability and growth of the SaaS business. Special attention must be given to this parameter in any effective SaaS business growth monitoring program. Customer dissatisfaction and non-renewals are major reasons for churn. While non-renewal can be attributed to customer dissatisfaction, a major share of non-renewals could also be due to other business support processes and sales effectiveness. Customer dissatisfaction could be analyzed from product usage, product defects and the impact of negative or positive advocacy. Net promoter score for the product, if that can be measured, will be a strong indicator of the positive advocacy factor. A low level of product usage is an early indicator of churn.

it is also important to understand churn rate patterns. An early-stage product deficiency or the addition of a remarkable set of features in a refreshed product or a targeted service improvement program can dramatically alter the churn rate. However, for the indicator to be sensitive to the course corrections, panel studies are very useful. For example, creating a group of customers with similar usage characteristics who started using the product during the same period and analyzing the churn rate within such groups could yield more revealing insights.

cash-flow indicators

Total recurring revenue (e.g., per month), average revenue per customer and the cost of sales or cost of acquiring a customer are the key parameters that determine cash-flow health. Most subscription businesses attempt to de-risk cash flow challenges by offering discounts for longer-term commitments. Therefore, it makes more sense to gauge the effectiveness of such programs by measuring the percentage of upfront long-term commitment as a ratio to the overall monthly/unit period commitment.

One effective indicator of the cost of acquiring a customer is the number of months required to recover such costs.

profitability indicators

The two essential profitability indicators are customer profitability and overall product profitability. Customer profitability depends on the lifetime value of a customer and the cost of acquiring a customer:

- lifetime value depends on the following indicators: Average revenue per customer, average customer lifetime (decreasing churn rate and improving renewals can result in increasing average lifetime) and the cost of recurring service or cost of service.

- cost of acquiring customer (CAC) depends on the total cost of sales and marketing, and the number of deals closed (e.g., sales lead conversion ratio is critical in maintaining lower costs of acquiring customers).

The level of human intervention required in closing the sales is a determinant factor in the cost of acquiring a customer. Measuring the employee costs of sale as a percentage of the total cost of acquiring a customer is a good way to find this out. (The cost of acquiring a customer includes marketing programs, promotions, etc.).

Completely online self-service sales closure, if possible, can help reduce CAC or channelize the resources used in campaigns and promotions. Needless to say, the scalability of such online models is very high.

product profitability and overall product profitability are the big indicators of any business success. This is best described in accounting terms – the total revenue less cost of goods sold, plus all other expenses.
• **Workforce productivity or average revenue per employee and average cost per employee**
  are parameters that could be useful where the number of employees also grows significantly with business growth.

**Business Performance Indicators**

Figure 3 lays out the business measurement metrics that ISVs should track and manage.

**SaaS Monitoring: Deriving Insights**

The key rule is to key an eye on critical business trends and analyze the indicators as a time series. Use a panel study (or cohort analysis) wherever necessary. Key considerations for deriving actionable insights from these metrics include:

- **Total number of customers and leads** are essential indicators; however, it is important to analyze the churn rate for root causes.
- **Funnel conversion** needs special attention. Detailed segmentation, grouping and study of churn patterns and funnel conversion will provide deep insights into product and business growth.
- **Renewal rate and churn** require separate treatment. While the non-renewal as well as churn could be attributed to customer dissatisfaction, a major share of non-renewals could also be due to other business support process and sales effectiveness shortcomings.
- **Customer dissatisfaction** could be analyzed from product usage, product defects and the impact of negative or positive advocacy. Net promoter score for the product, if that can be measured, will be a good indicator of the positive advocacy factor. A low level of product usage is an early indicator of churn.

- **In models where an upfront payment option for longer period commitment is involved,** it’s better to analyze the churn from the beginning of the end of the initial commitment period. (Including customers from upfront initial commitment can artificially improve the churn rate; however, the actual churn would be known only from the end of initial upfront commitment.)

- **A good practice is to loop back renewals** into the sales data as an integral part, though opinions vary.

- **Carry out panel studies** to determine the impact of marketing initiatives, product refreshes and promotional programs, based on indicators such as recurring subscription revenue, churn rate, renewals and lifetime value.

**Looking Ahead**

An effective SaaS performance monitoring framework will contain indicators for business growth, cash flow and profitability. As in any business, the lifecycle phase must be considered before setting realizable objectives for performance monitoring. Time series analysis of these indicators can lead to sharper insights, which in turn can help make necessary course corrections in the business or operations model.

An upwardly mobile lifetime value and a downward cost of acquiring a customer present a very solid picture of business health. What top three measures would you choose to do a quick health check on an SaaS offering? A steadily climbing lifetime value, sharply declining cost of acquiring a customer combined with a reduced or low churn rate is a perfect scenario that indicates an SaaS offering is not only performing well but cruising to market leadership.

**ISV Tracking Metrics**

<table>
<thead>
<tr>
<th>Growth Indicators</th>
<th>Cash-Flow Indicators</th>
<th>Profitability Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Total number of customers.</td>
<td>• Total recurring revenue.</td>
<td>• Months to recover cost of customer acquisition.</td>
</tr>
<tr>
<td>• Average revenue per customer.</td>
<td>• Average revenue per customer.</td>
<td>• Customer profitability.</td>
</tr>
<tr>
<td>• Churn rate.</td>
<td>• Cost of acquiring customer.</td>
<td>• Product line profitability.</td>
</tr>
<tr>
<td>• Net promoter score.</td>
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<td>• Workforce productivity.</td>
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</table>
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