SaaS R&D Productivity
Report 2018

OPEXENGINE SAAS BENCHMARKING COMMUNITY WHITEPAPER
About OPEXEngine:
OPEXEngine is the industry leader in delivering financial and operating benchmarks for the SaaS sector, with a particular expertise in performance measurement and operating metrics for subscription-based companies. OPEXEngine has worked with hundreds of leading private and public Software and SaaS companies since 2007. OPEXEngine’s member-based benchmarking community supplies the comprehensive data for the annual benchmarking. OPEXEngine’s benchmarking reports are key tools used by senior operating executives to support budgeting, strategic planning and investment processes. For further information, visit www.opexengine.com.

About this Report:
This report represents an analysis of research and development (R&D) productivity benchmarks for SaaS companies. The following charts were prepared using OPEXEngine’s BenchmarkEngine™, OPEXEngine’s EdgarEngine™ and proprietary statistical analysis.

Methodology:
OPEXEngine gathers company data through a secure process, provides for its consistency through company consultations and automated processes, and protects confidentiality through aggregating and anonymizing data into benchmarks. Data from OPEXEngine’s BenchmarkEngine™ proprietary database of over 300 B2B SaaS companies has been combined with data from OPEXEngine’s EdgarEngine™ to create a database of public and private companies for this report. Data was pulled for fiscal years 2015 and 2016 to compare previous year R&D expense against the next year’s net revenue gain. Data in this report is presented as medians unless otherwise stated. Companies are segmented according to whether they are private or public, and further by company revenue size.

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Goals of this Report:
This report is designed to help you benchmark the expense and productivity of your R&D operations against similar companies for budgeting and planning purposes. OPEXEngine benchmarks support you through:

- Equipping you with SaaS sector R&D benchmark metrics;
- Framing fact-based discussions with management, colleagues, boards, investors and potential investors;
- Providing actionable insights to help you allocate your resources to grow efficiently.
TABLE OF CONTENTS

I. OPEXENGINE INSIGHTS

II. THE R&D FACTOR

III. PRIVATE COMPANIES <$50M

IV. PRIVATE COMPANIES >$50M

V. PRIVATE COMPANIES – IPO TRACK

VI. PUBLIC COMPANIES <$400M

VII. PUBLIC COMPANIES >$400M

VIII. ABOUT OPEXENGINE
I. OPEXENGINE INSIGHTS

The report focuses on R&D investments by SaaS Companies. As innovative technology companies, SaaS companies are continually investing in building best-in-class products. Yet, it is not clear to many SaaS executives what the optimal level of R&D spending should be to grow revenue and sustain a leadership position.

To help financial and operating professionals to assess whether they are investing optimally in R&D, we have developed a metric -- the R&D factor -- that links the incremental revenue growth resulting from R&D expenditures. The R&D factor should not be looked at in isolation. Obviously, many other operations are drivers in generating revenue. Sales & Marketing in particular is critical for successful product launches and new product revenue. When benchmarking the “R&D Factor” of SaaS companies, of different sizes and stages of growth, it does provide valuable insights into how to allocate R&D resources and evaluate the effectiveness of R&D investment.

Within overall R&D spending, it is also important to track carefully the percent of total R&D expense spent on new development versus the percent spent on tech debt or product maintenance (typically viewed as necessary to keep customers satisfied and maintain the technology base for products). High tech debt can indicate problems in your R&D organization and management, or can be necessary because of changing technologies and standards.

Investment to reduce tech debt is necessary, but doesn’t contribute directly to revenue growth and every tech company has to balance their R&D spending between maintenance and driving new revenue. If there’s too little spending here, the effects will be felt at some point in the future—particularly with the existing customer base, which is critical for high renewal rates and recurring revenues. If there’s one assumption you can make in the tech industry, it is that technology will keep evolving and you’ll need to invest to keep your products current.
I. OPEXENGINE INSIGHTS (Continued)

PRIVATE COMPANIES

Private companies under $50 million
- Private companies under $50 million in revenue should target an R&D factor of 1.7 or higher, meaning that they get at least $1.70 in new revenue for every dollar they spend in R&D.
- One-third of companies in this segment are achieving R&D factors over 1.7 in combination with growth rates of 33 percent or higher. These top performers have median R&D factors of 2.5 in combination with median growth rates of 53 percent.
- A third of companies in this segment have R&D factors under 1.0, essentially failing to recuperate R&D expenses through growth.

Private companies over $50 million
- Private companies over $50 million in revenue should also target an R&D factor of 1.7 or higher, but may not be able to couple this with high growth.
- A third of these companies in this segment were able to maintain this level of R&D productivity, and only half of these could maintain growth rates of 33 percent or higher.
- Half of private companies over $50 million have R&D factors of 1.0 or lower, essentially failing to recuperate R&D expenses through growth.

Private companies – IPO track
- Private companies from the OPEXEngine historical data en route to successful IPOs had a median R&D factor of 1.8.

PUBLIC COMPANIES

Public companies under $400 million
- A quarter of the companies in this segment were able to maintain strong R&D productivity. The median R&D factor for top performers is 2.8 compared to the median for the segment as a whole of 1.3.
- Nearly one-third of companies in this segment have R&D factors below 1.0 including several companies with negative R&D factors reflecting declining revenues.

I. OPEXENGINE INSIGHTS (Continued)

Public companies over $400 million
• Public companies over $400 million in revenue should target an R&D factor of 1.8 in combination with a growth rate of 25 percent or higher.

• An estimated one-third of companies in this segment maintain this level of performance. The median R&D factor for top performers is 2.3 compared to the overall median of 1.5.

• Fewer than 30 percent of companies in this segment have R&D factors of under 1.0 and none had negative R&D factors.
II. THE R&D FACTOR

At the highest level, the best and clearest way to track R&D productivity is our “R&D Factor”. This calculation tracks how much new revenue is associated with each R&D dollar. It is valuable to compare your organization’s R&D performance measure against competitors, peers and market leaders. Obviously, R&D alone doesn’t create new revenue, the rest of the organization has to perform effectively and fire on all cylinders as well. Companies cannot produce new revenue with even the greatest of products if they are not effectively marketed and sold. Benchmarking the R&D factor provides useful insights into R&D productivity by using a simple, apples-to-apples comparison for all companies.

The R&D performance measure is calculated by:

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\frac{(This\ year's\ revenue\ minus\ last\ year's\ revenue)}{Last\ year's\ R&D\ expense}
\]

...think the Magic Number for R&D.
III. PRIVATE COMPANIES <$50M

- Private companies under $50 million in revenue should target an R&D factor of 1.7 or higher, meaning that they get at least $1.70 in growth for every dollar they spend in R&D.
- A third of companies in this segment are achieving R&D factors over 1.7 in combination with growth rates over 33 percent. These top performers have median R&D factors of 2.5 in combination with median growth rates of 53 percent.
- The median R&D factor of private companies under $50 million is 1.3.
- A third of companies in this segment have R&D factors under 1.0, essentially failing to recuperate R&D expenses through growth.
- Private companies under $50 million are investing an estimated 24 percent of revenues with a subsequent revenue growth rate of an estimated 35 percent.
- Top performing companies are investing at essentially the same levels but enjoying much higher growth rates.
IV. PRIVATE COMPANIES >$50M

- Private companies over $50 million in revenue should target an R&D factor of 1.7 or higher, but may not be able to couple this with high growth.
- While a third of private companies over $50 million in revenue were able to maintain this level of R&D productivity, only half of them were growing at rate higher than 33 percent.
- The median R&D factor of private companies over $50 million decreases to 1.0, over 20 percent less than for private companies under $50 million. The median R&D factor for top performers was 2.6.
- Private companies over $50 million have a median R&D expense of $11.3 million supporting a change in revenue of $11.8 million.
- Private companies over $50 million are investing an estimated 16 percent of revenues, or a third less than smaller private companies, with subsequent revenue growth rate proportionately lower, at an estimated 22 percent.
- Top performers are spending marginally less on R&D as a percent of revenue but reaping significantly higher growth rates.
V. PRIVATE COMPANIES – IPO TRACK

- Private companies from the OPEXEngine historical data en route to successful IPOs had a median R&D factor of 1.8.
VI. PUBLIC COMPANIES <$400M

- Public companies under $400 million in revenue should target an R&D factor of 2.2 or higher in combination with a growth rate over 40 percent.
- A quarter of the companies in this segment were able to maintain this level of performance. The median R&D factor for top performers is 2.8 compared to the median for the segment as a whole of 1.3.
- Nearly one-third of companies in this segment have R&D factors below 1.0 including several companies with negative R&D factors reflecting declining revenues.
- Public companies under $400 million, are investing in product development and tech debt at rates of 22 percent, higher than private companies over $50 million. Their median revenue growth rate, at 32 percent, is also higher than private companies over $50 million.
- Top performers are investing marginally less but reaping growth rates nearly twice as high.
VI. PUBLIC COMPANIES <$400M (Continued)

- Companies with the highest R&D factors among public companies under $400 million are maintaining growth rates above 40 percent.
VI. PUBLIC COMPANIES <$400M (Continued)

- An estimated one-quarter of public companies under $400 million have R&D factors under .8 in combination with low growth rates of 14 per cent or less.
- Three companies, Seachange International, Marin Software and LivePerson have negative R&D factors reflecting decreasing revenues.
VII. PUBLIC COMPANIES >$400M

- Public companies over $400 million in revenue should target an R&D factor of 1.8 in combination with a growth rate of 25 percent or higher.
- An estimated one-third of companies in this segment maintain this level of performance. The median R&D factor for top performers is 2.3 compared to the overall median of 1.5.
- Just under 30 percent of companies in this segment have R&D factors under 1.0 and none are negative.
- Public companies over $400 million have a median R&D expense of $125.9 million, supporting a median change in revenue of $160.7 million.
- Public companies over $400 million are investing in R&D at rates of 18 percent, lower than the 22 percent for public companies under $400 million in revenue. Their revenue growth rate, at 26 percent, is lower than the 32 percent experienced by public companies under $400 million in revenue.
- Top performers are investing at lower rates and enjoying higher rates of growth.
VII. PUBLIC COMPANIES >$400M (Continued)

- Top R&D productivity performers from public companies over $400 million, with the exception of Tyler Technologies, have a lower range of R&D factors, from 1.8 to 2.4, in comparison to public companies under $400M.
VII. PUBLIC COMPANIES >$400M (Continued)

- Bottom R&D productivity performers from public companies over $400 million are investing higher than average numbers in R&D despite decent to strong revenue growth, resulting in lower R&D factors.
- If these companies are investing productively, their R&D factor should improve.
VIII. ABOUT OPEXENGINE

OPEXEngine

We deliver actionable operating benchmarks for Cloud, SaaS and software companies to see where they are going and how to get there.

Benchmark Data, Content and Community Platform

• Proprietary data platform
• Non-GAAP metrics and KPIs
• Annual benchmarking since 2007
• 300+ participating companies and growing
VIII. ABOUT OPEXENGINE (Continued)

OPEXEngine

Compare your company to 60+ different peer groups

Apply metrics driven discipline to financial planning

Measure lagging & high performing KPIs

For more information about OPEXEngine or OPEXEngine’s SaaS benchmarks, please contact us at info@opexengine.com