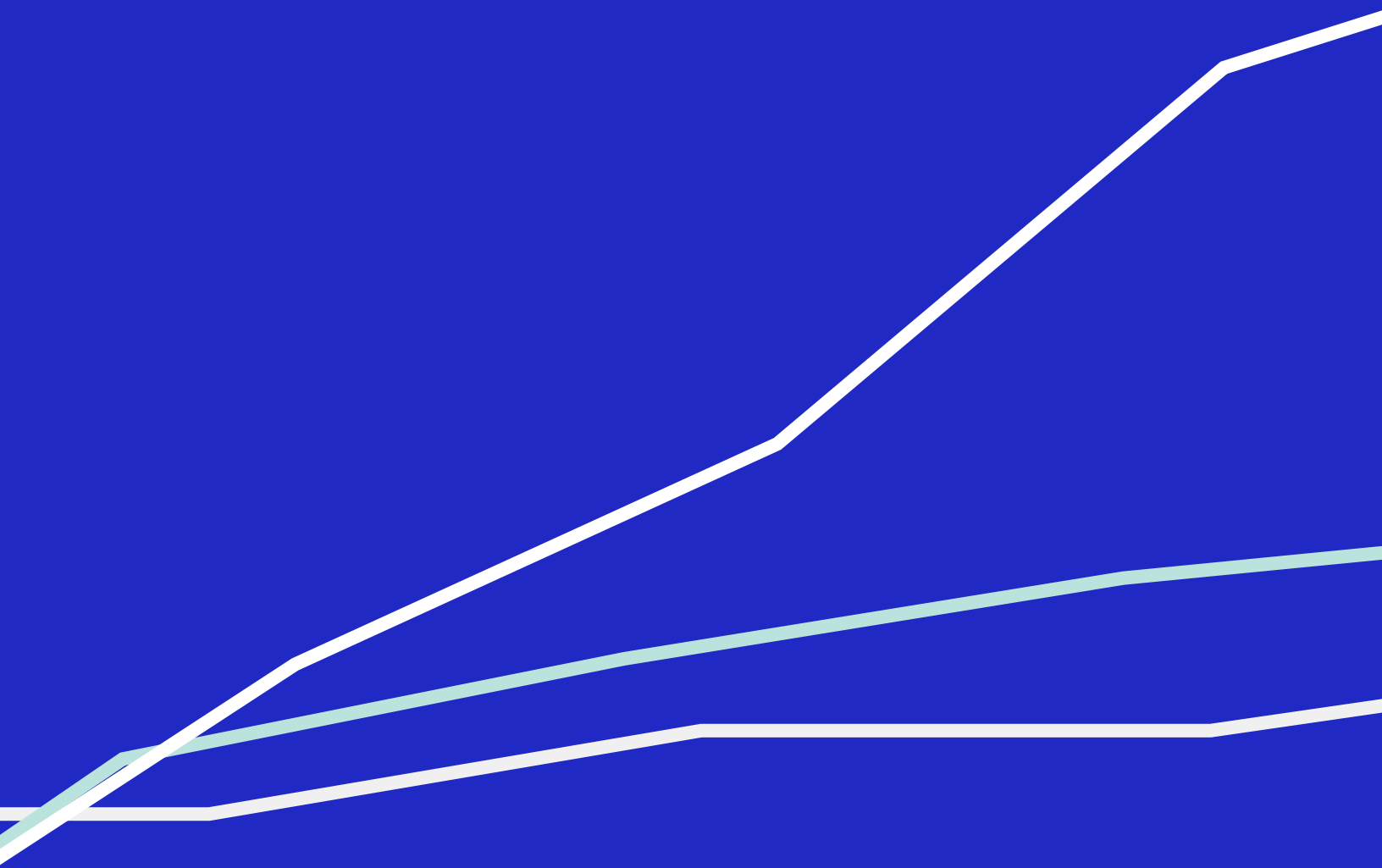


The Subscription Economy Index™

March 2021



SUBSCRIPTIONS: DESIGNED
AROUND CUSTOMERS,
MODELED FOR RESILIENCE

Subscribed
Institute ●

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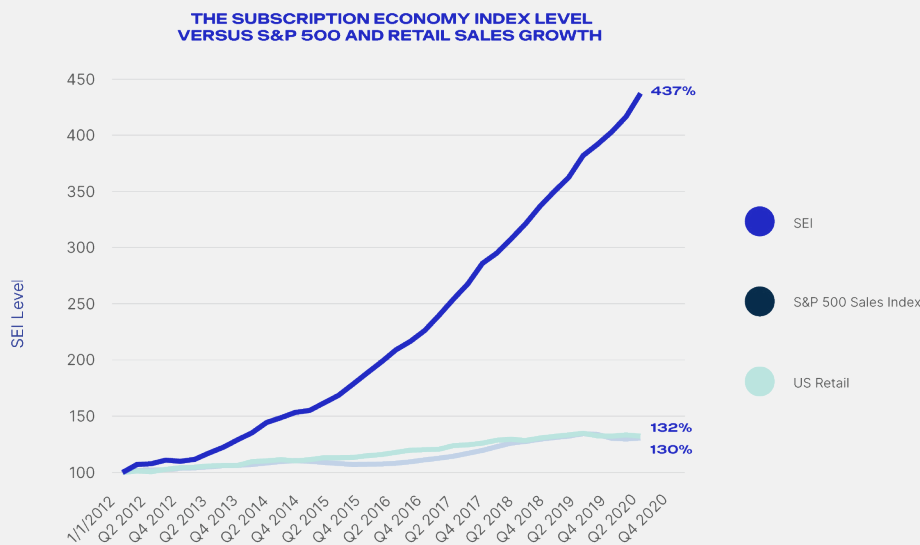
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Introduction

SUBSCRIPTIONS: DESIGNED AROUND CUSTOMERS, MODELED FOR RESILIENCE

The ongoing COVID-19 pandemic continues to upend plans and expectations and transform the way the world does business. In an attempt to react to shifting market conditions and consumer demands, companies across industries were challenged to migrate to digital service models. Many businesses were ill-equipped for digital transformation, with a lack of understanding of how to successfully transition from products to services. But many companies that have successfully embraced subscription models have reaped the rewards and demonstrated great resilience.

The Subscription Economy® has grown nearly 6x (more than 435%) over the last 9 years, and subscription businesses in the Subscription Economy Index™ (SEI) report have consistently grown five to eight times faster than traditional businesses. In 2020, subscription businesses in the SEI demonstrated revenue growth at a rate of 11.6%, while revenues of its product-based peers declined, changing -1.6%. In Q4 alone, subscription companies in the SEI experienced revenue growth at a rate of 21%, seven times faster than S&P 500 companies' growth rate of 3%.



Overall and throughout COVID-19, companies in the SEI report did not slow; in many cases, they have thrived. The year's lockdowns and other safety measures have accelerated a new era that Zuora refers to as the [End of Ownership](#) in which consumers are increasingly less interested in owning things and more inclined to achieve desired outcomes through easy-to-access services.

For example, consumers have become accustomed to convenience as an experience. They expect to be able to access movies, TV, and music on demand. Many consumers want transportation, whether it's a car or bicycle, to be available as-needed, without onerous upfront costs. Many consumers want clothing and groceries delivered to their home regularly, and customized to their specifications.

The latest SEI report highlights the ways in which companies with subscription models were able to adapt to these changing customer preferences during the pandemic. Many companies across industries are propelling their businesses forward by automating administrative processes, broadening access to services, and placing the power in the hands of the subscriber to choose and self-manage subscriptions.

Now and in the future, we expect that resilient businesses will design their offerings for ultimate consumer flexibility and freedom — not solely creating products to be sold as one-time transactions, but designing services that customers can tap into anytime, anywhere, to whatever extent that they choose.

Definitions & Terminology

SECTORS:

- **The SaaS Index** includes companies whose software is accessed online via subscriptions, including traditionally perpetual software shifting to SaaS, pure B2SMB SaaS, B2Every SaaS, and Enterprise SaaS.
- **The Telecommunications Index** includes videoconferencing, satellite communications, broadband networks, digital infrastructure, and fiber networks.
- **The Manufacturing Index** includes fabrication services, industry-specific software providers, industrial design, heavy equipment, and tool manufacturers.
- **The Business Services Index** includes management consulting, legal assistance, data services, market research, staffing and recruitment, marketing and advertising, and records management.
- **The IoT Index** includes a broad mix of several industries including security, technology, energy, transportation, scientific instruments, and construction. All of the companies in this index, however, manage digital services based on connected hardware.
- **The Media Index** includes content providers, OTT streaming media companies, television and radio broadcasters, cable operators, search and navigation services, editing services, and production companies.
- **The Publishing Index** includes newspapers, magazines, book publishers, educational content providers, and corporate research providers.
- **The Healthcare Index** includes healthcare software, health and personal care stores, nursing and residential care facilities, medical equipment, and supplies manufacturing.
- **The Education Index** includes education and training software and services, internet educational services, vocational schools, and internet and online services providers.

TERMINOLOGY:

The following company performance metrics are reported as annualized percentage changes:

- **Churn Rate:** The percentage of lost customers over a set period of time.
- **Net Account Growth Rate:** The percentage of gained accounts over a set period of time.
- **ARPA Growth Rate:** The growth rate of Average Revenue Per Account.

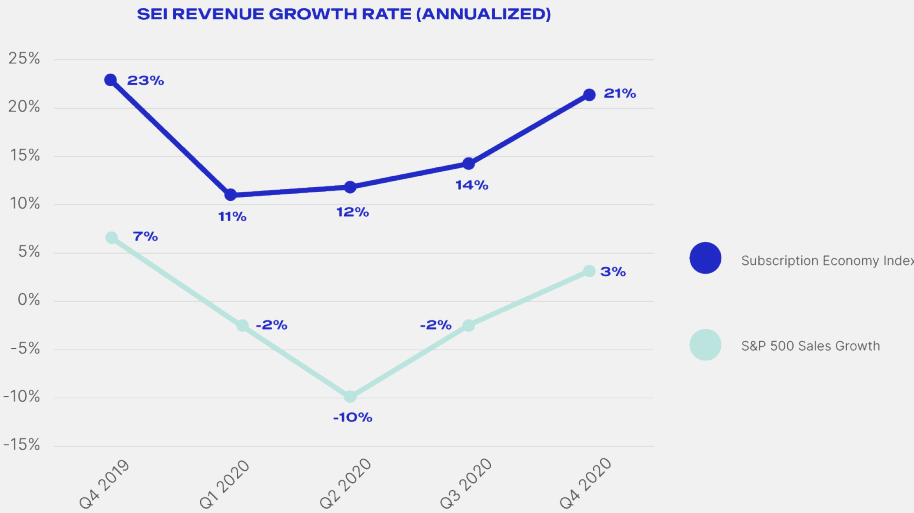
The following pricing and packaging metrics are reported as percentages:

- **Usage Billing:** Billing a customer on how much they use the service.
- **Monthly Renewals:** The subscription is renewed on a monthly basis.
- **Evergreen Renewals:** The subscription has no end date and customers are automatically billed until the subscription is canceled.
- **Discounts:** Reduction of the regular price of a service.
- **Free Trials:** A service is offered to customers for free for a limited time period.

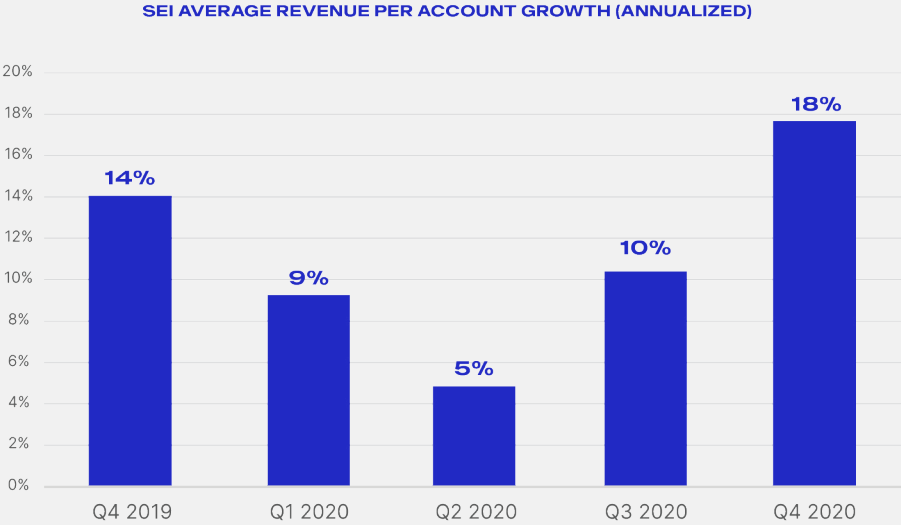
Key Findings

Subscription Economy in Five Figures

1. SEI REVENUE GROWTH RATE CLIMBED QUARTER OVER QUARTER IN 2020, NEARLY RETURNING TO PRE-PANDEMIC LEVEL.

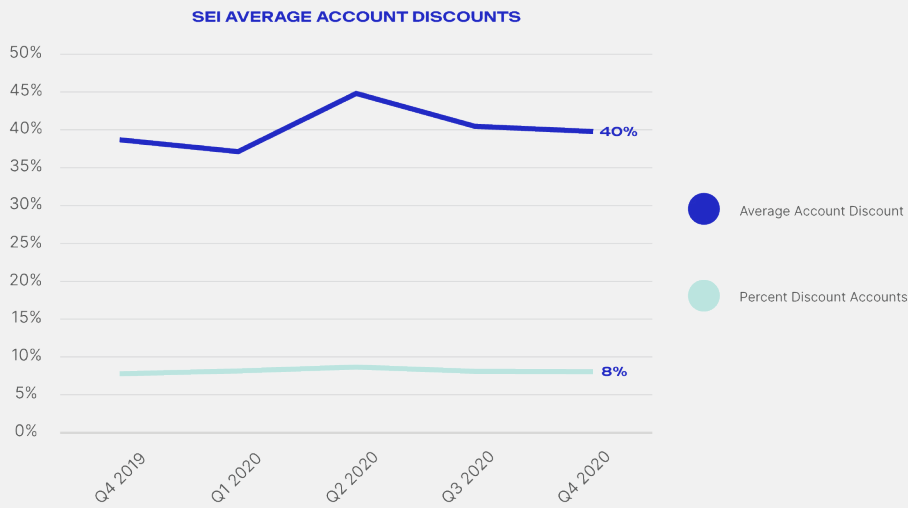


2. Q4 2020 SEI AVERAGE REVENUE PER ACCOUNT RATE SURPASSED THE 2019 RATE.

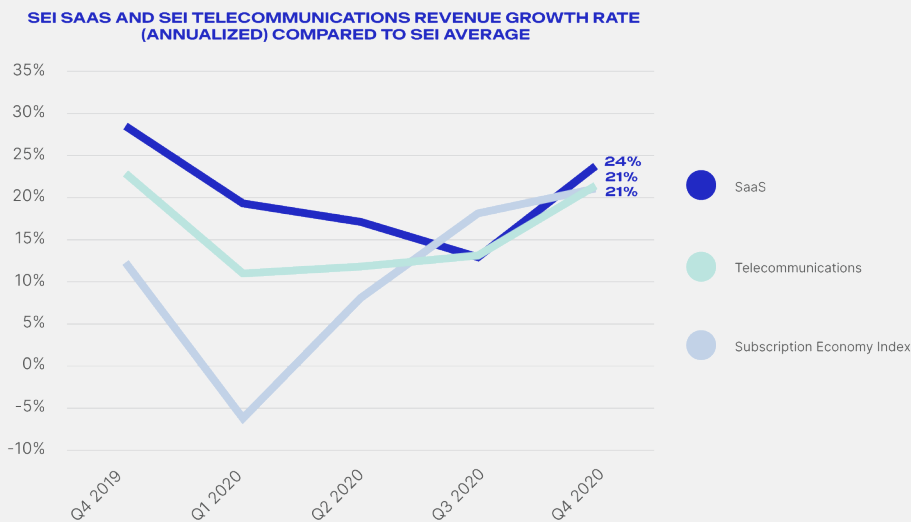


Subscription Economy in Five Figures

3. AVERAGE ACCOUNT DISCOUNTS RETURNED TO PRE-PANDEMIC NORM.

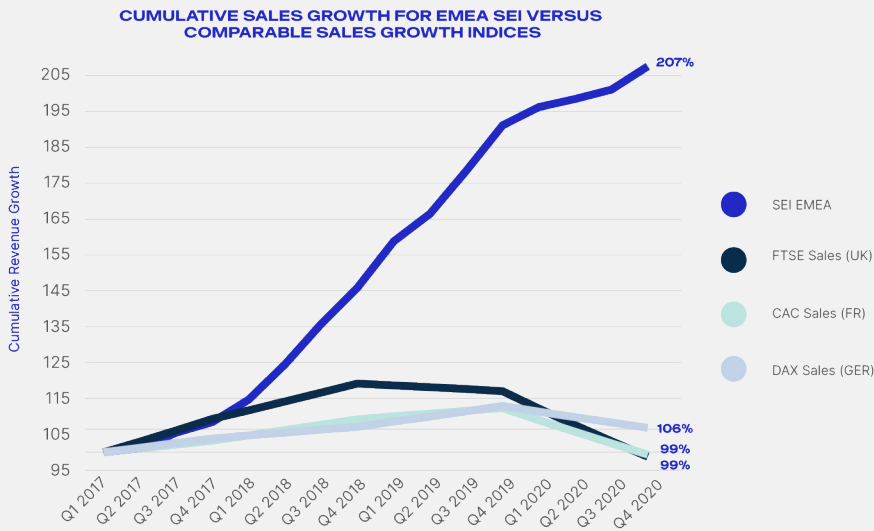
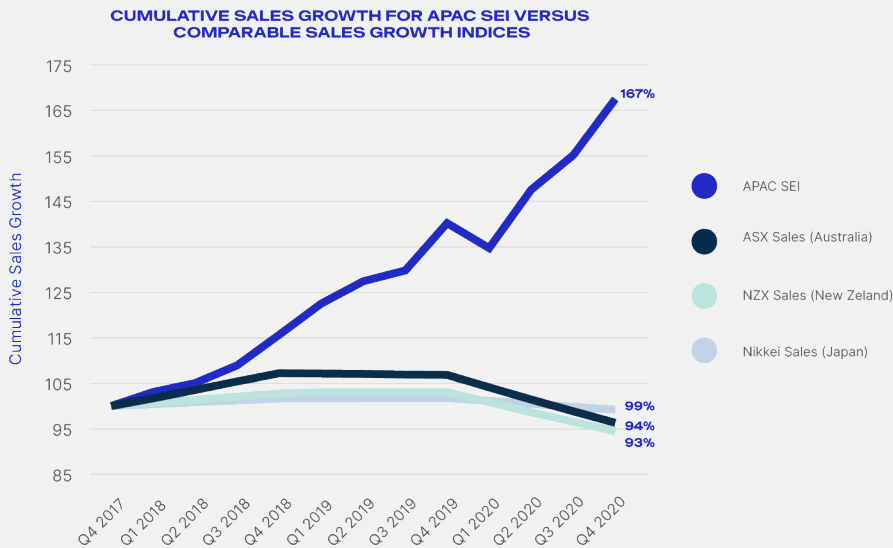


4. SAAS AND TELECOMMUNICATIONS LED IN REVENUE GROWTH RECOVERY AMONG SEI SECTORS.



Subscription Economy in Five Figures

5. IN APAC AND EMEA, SUBSCRIPTION COMPANIES SURGED WHEN COMPARED TO REGIONAL STOCK MARKETS.



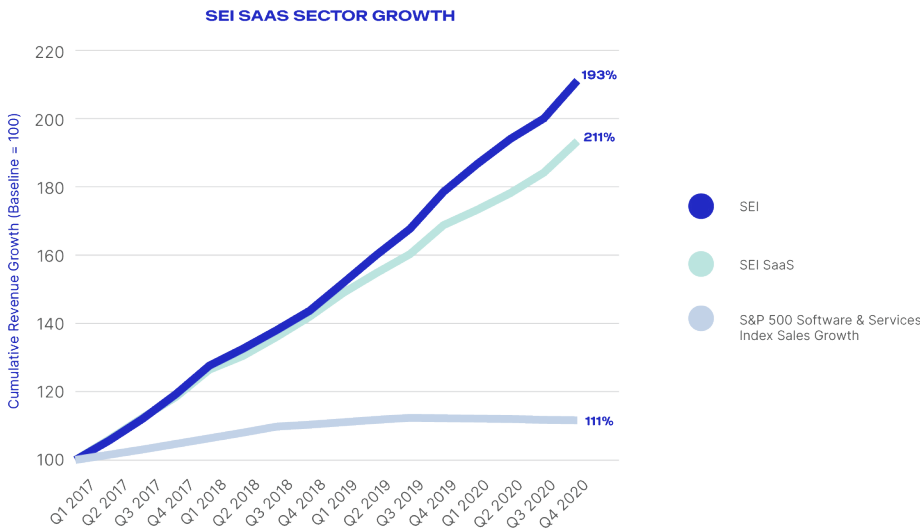
State of SEI by Sector

“ There’s a reason why successful SaaS companies use subscription models. Any as-a-service business needs to re-think the traditional go-to-market model and focus on building a customer experience that makes services easy to use, renew, and expand. ”

– Michael Fauscette, Advisor, G2

SaaS

SaaS led SEI revenue growth in the final quarter of 2020, driven by Q4 small business recovery.



The SaaS sector includes digital software solutions that support businesses and consumers. The “SaaS” model was already the predominant and preferred approach for accessing software capabilities, and the trend toward subscription-based software only accelerated as a result of the pandemic. Because these solutions are delivered via the cloud, customers benefit from anytime, anywhere access. This was especially critical this past year, when many people were working, learning, and living in their homes.

Companies that offer subscription software solutions are generally resilient due to a number of factors, just one of which is a recurring revenue model. A key strength lies in their ability to constantly respond to customer demand and to improve, update, and innovate via the cloud.

In 2020, companies in the SEI that offer subscription software solutions demonstrated a revenue growth rate of 18%, on average, driven by a strong comeback in Q4 which saw a revenue growth rate of 24%. Gartner forecasts that the revenue for cloud application services, or SaaS, will grow almost \$36 billion from 2020 to 2022, reflecting an increase of approximately 34% during that period.¹

The SEI report shows that companies in the SaaS sector outperform other sectors, experiencing the most robust growth trajectory in the SEI.

¹Gartner Newsroom. (July 2020) [https://www.gartner.com/en/newsroom/press-releases/2020-07-23-gartner-forecasts-worldwide-public-cloud-revenue-to-grow-6point3-percent-in-2020#:~:text=The%20worldwide%20public%20cloud%20services,%2C%20according%20to%20Gartner%2C%20Inc.&text=Software%20as%20a%20service%20\(SaaS,2020%20\(see%20Table%201\).](https://www.gartner.com/en/newsroom/press-releases/2020-07-23-gartner-forecasts-worldwide-public-cloud-revenue-to-grow-6point3-percent-in-2020#:~:text=The%20worldwide%20public%20cloud%20services,%2C%20according%20to%20Gartner%2C%20Inc.&text=Software%20as%20a%20service%20(SaaS,2020%20(see%20Table%201).)



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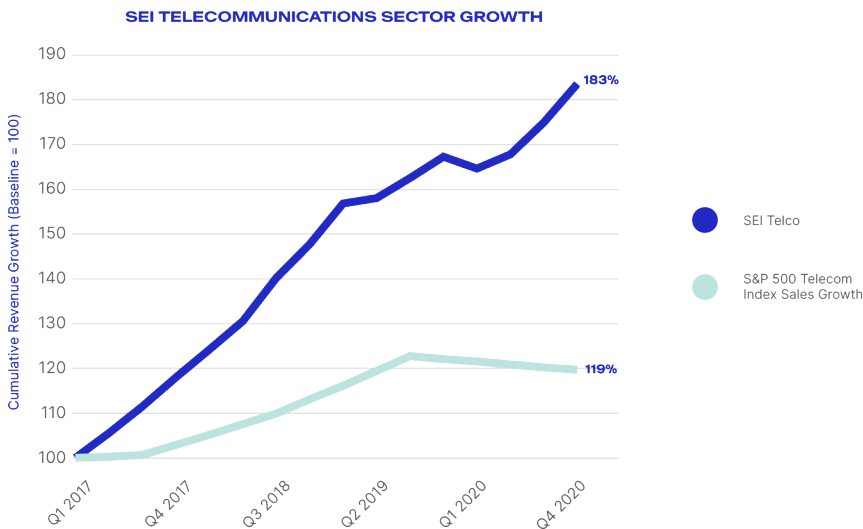
To optimize for growth, we recommend companies in this sector consistently innovate around the customer experience and build go-to-market strategies for retention and expansion as well as acquisition.

“ Telecommunications companies are increasingly adding new subscription services – expanding beyond voice and high speed Internet access – bundling video conferencing, OTT streaming, and IoT with their core offerings. According to The 5G Economy², 5G’s full economic benefit should be realized around the globe in 2035, when a broad range of industries could produce up to \$12.3 trillion worth of goods and services enabled by 5G mobile technology. ”

– Jeff Allen, CEO, Andelan Ventures

Telecommunications

SEI Telecommunications sector led in year over year revenue growth.



In response to shelter-in-place mandates, 2020 saw an influx of remote and mobile work environments. Meanwhile, individuals faced travel restrictions and were limited in their ability to meet in-person with friends and families. Telecommunications enabled remote workers to collaborate and helped keep people connected. But in 2020, S&P 500 Telecom Index companies took a dip in sales; quite the opposite, revenue of subscription telecommunications companies in the SEI grew an average of 10% in 2020.

Subscription telecommunications providers in the SEI more than tripled new account growth in 2020's Q4 compared to 2019's Q4, while keeping account churn low.

Remote workforces are a key factor supporting continued growth for telecommunications providers³. A July 2020 survey from Gartner found that 82% of business leaders plan to allow employees to work remotely at least some of the time⁴.

² IHS Economics. The 5G Economy: How 5G technology will contribute to the global economy. (2017) <https://cdn.ihs.com/www/pdf/IHS-Technology-5G-Economic-Impact-Study.pdf>

³ Philip, R. IoT for All, How "Work From Home" During Covid-19 Has Transformed The World Of Telecommunications. (August 2020): <https://www.iotforall.com/work-from-home-telecommunications>

⁴ Gartner Newsroom. (July 2020) <https://www.gartner.com/en/newsroom/press-releases/2020-07-14-gartner-survey-reveals-82-percent-of-company-leaders-plan-to-allow-employees-to-work-remotely-some-of-the-time>



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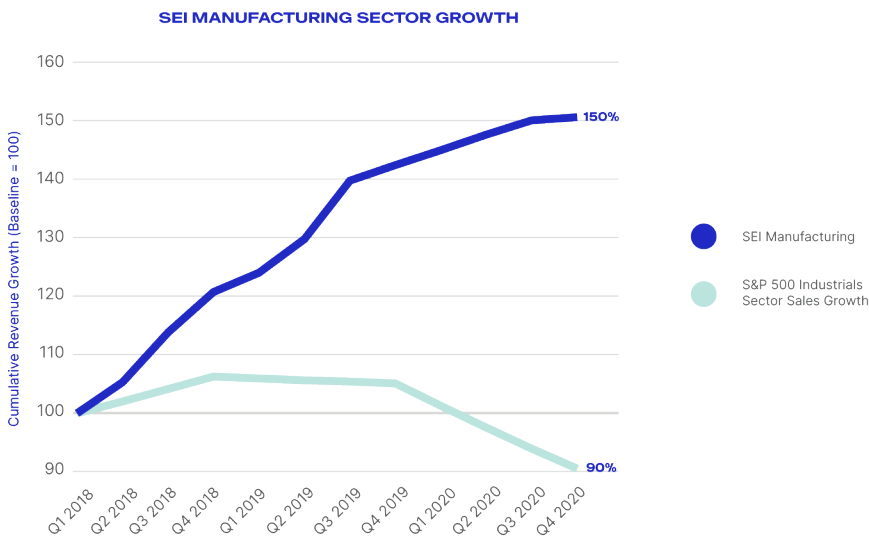
In order to maintain growth, we recommend that subscription telecommunications companies strive to flex with customers' needs — however they return to work and travel. These companies should continue adaptively learning subscribers' preferences and delivering targeted services to meet them.

“ With access to product data and subscription behaviors, industrial natives are in a powerful position to continuously innovate and create the next generation of digital services and products. It is amazing what can be learned from managing hundreds of users and how they consume your offer. ”

– Stephan Liozu, Chief Value Officer, Thales Group⁷

Manufacturing

The growth for manufacturing companies in the SEI slowed, but avoided the downturn experienced by traditional industrial manufacturers.



In recent years, traditional equipment manufacturers in the S&P 500 Industrials Sector have experienced slowed product sales growth, which had essentially flatlined before the pandemic. Meanwhile, forward-looking manufacturers sought new revenue streams in aftermarket services⁵, including equipment maintenance and repair as well as data and analytics services for their customers. According to IDC, these services offer manufacturers “an opportunity to differentiate and deliver unrivaled value to customers.”⁶

In 2020, the manufacturing sector was impacted by extreme disruptions to the supply chain and capital budget cuts due to the COVID-19 pandemic. Compared to the last quarter of 2019, S&P 500 Industrials Sector sales declined by nearly 14%. Meanwhile, revenue in the Manufacturing SEI increased by nearly 6% since the last quarter of 2019.

⁵Wellener, P., Lineberger R., Millar K., Bendig O., Hussain A., Deloitte: Aftermarket services transforming manufacturing in the wake of the COVID-19 pandemic (May 2020). <https://www2.deloitte.com/us/en/insights/industry/manufacturing/aftermarket-services-digital-differentiator-beyond-COVID-19.html>

⁶Pinder, A. IDC MarketScape: Worldwide Manufacturing Service Life Cycle Management Systems Integrators/ Business Process Outsourcing 2020 Vendor Assessment (November 2020). <https://www.idc.com/getdoc.jsp?containerId=US45629420>

⁷Originally appeared in Industry Week (September 2019). <https://www.industryweek.com/leadership/article/22028258/a-manufacturing-subscription-model-is-its-own-beast-8-considerations-to-succeed>



Recommendation:

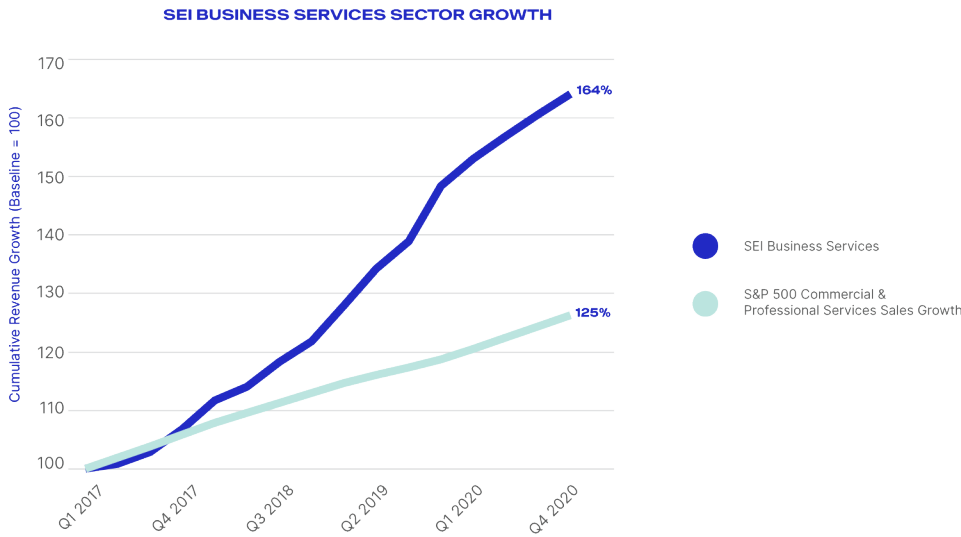
We recommend manufacturers reassess their businesses and invest in digital offerings to meet customers' needs for data driven insights, increased efficiency, and a changing environment.

7%
**COMPARED
 TO S&P 500**

In 2020, the revenue of Business Services companies in the SEI grew at a rate of 7% compared to S&P 500 Commercial & Professional Services Sales Growth rate of 4.7%.

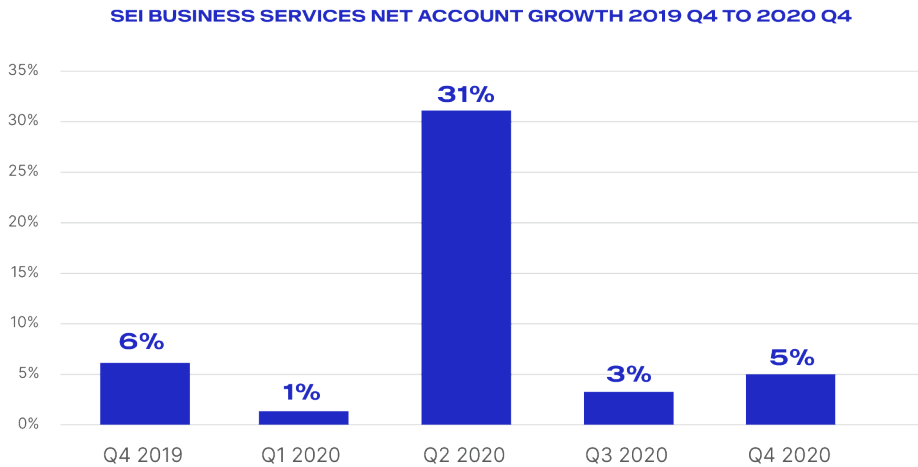
Business Services

Sign-ups spiked mid-year, as businesses rapidly responded to pandemic challenges.



In 2020, companies offering subscription business services were able to demonstrate value to their customers by providing always-on support. These businesses outpaced sales growth of the S&P Commercial and Professional Services sector by nearly 1.5x. In 2020, the revenue of Business Services companies in the SEI grew at a rate of 7% compared to S&P 500 Commercial & Professional Services Sales Growth rate of 4.7%.

Subscription business in the SEI services saw a significant sign-up spree in the second quarter, its highest account spike in years.



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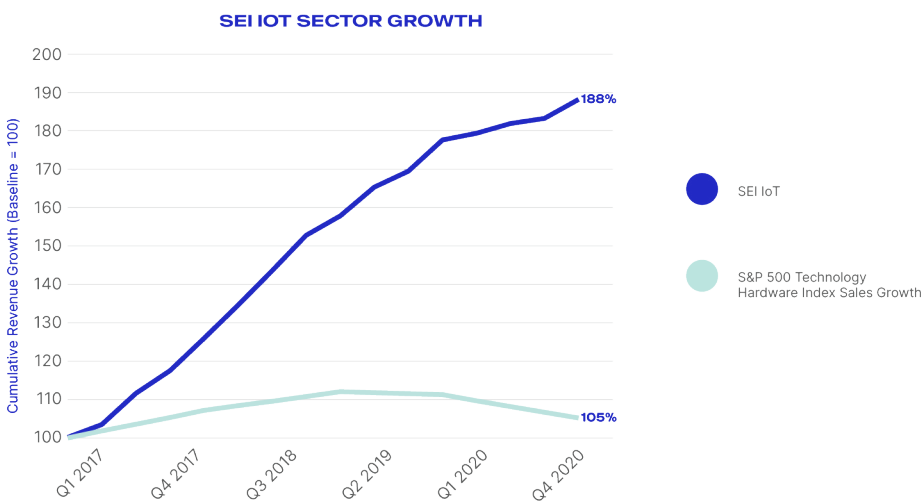
Subscription models can help consultancies scale, for instance, by supporting clients with clear and timely invoicing and flexible payment options. We recommend subscription corporate services companies focus on nurturing new accounts gained in 2020, innovating for 2021's needs.

“ After businesses got back to work after the first lockdowns, they determined that remote access to manufacturing IoT data, services that provide occupancy levels, and touch-free options for employee access were necessary. Many of these IoT products have a subscription component that was activated to help bring employees back to work or provide information so plant workers could stay home safely while still keeping manufacturing operations running. ”

– Stacey Higginbotham, Founder, Stacey on IoT

IoT

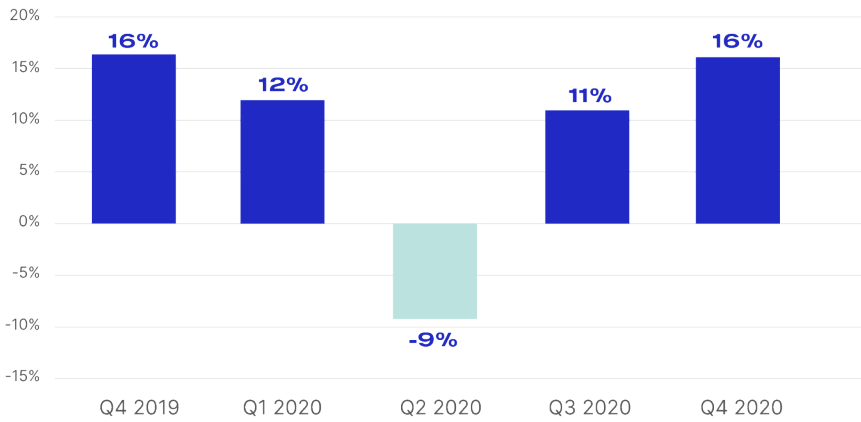
Subscription IoT revenue slowed but continued to grow, in reverse direction of S&P peers.



Subscription IoT businesses in the SEI experienced significant revenue growth compared to the sales of their S&P peers in 2020. Connected services can help reinforce the core value of a product or service and can create new monetization opportunities and enduring customer relationships⁸.

While the rate of subscription IoT revenue growth slowed in 2020 compared to prior years, the sub-sector saw full net account recovery in Q4, returning to 2019 Q4 levels.

SEI IOT NET ACCOUNT GROWTH (ANNUALIZED)



The pandemic catalyzed companies in the IoT sector to explore the role of digital services and subscriptions. Additionally, “product as a service” offerings enabled IoT manufacturers to enter new markets and find new opportunities for monetization. For example, IBM used IoT to track their buildings’ use and adapt to social distancing and enhanced cleaning protocols.⁹ IBM and others pivoted in light of a pandemic-specific challenge.

⁸Subscribed.com: 5 Strategies for Monetizing Connected Devices (2020). <https://www.subscribed.com/read/subscription-strategy/5-strategies-monetizing-connected-devices>

⁹IBM Global Real Estate: Optimizing space and safety for employees in the COVID-19 era. <https://www.ibm.com/downloads/cas/A5RAGNO9>

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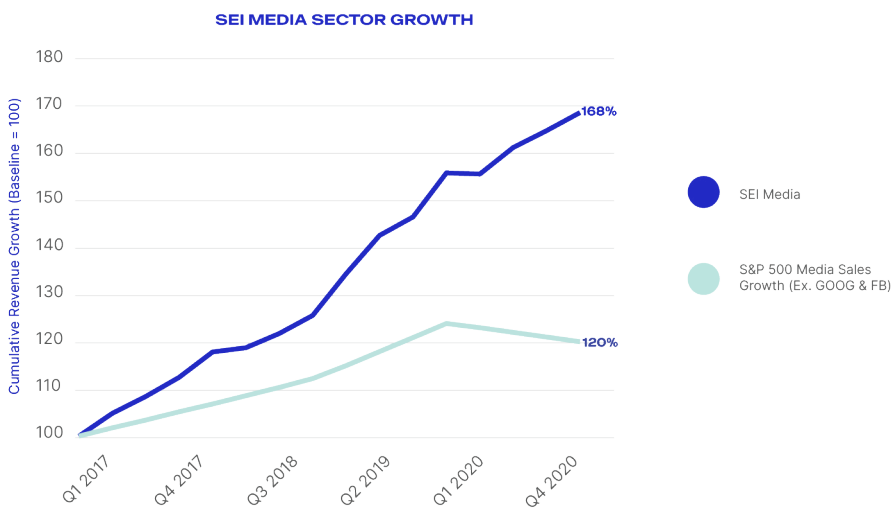
We can expect corporations to continue to explore IoT solutions that help them meet pressing needs in the future, such as reducing their carbon footprint. We recommend IoT companies focus on services to deepen customer relationships and reap the benefits of new revenue streams.

“ Today, overall consumer spending is about \$1.4 trillion for consumer internet and media. We believe that over the next three years, we’re going to add \$141 billion in revenue and subscriptions and another \$46 billion in single transactions. ”

– Michael Wolf, Co-Founder and CEO, Activate¹³

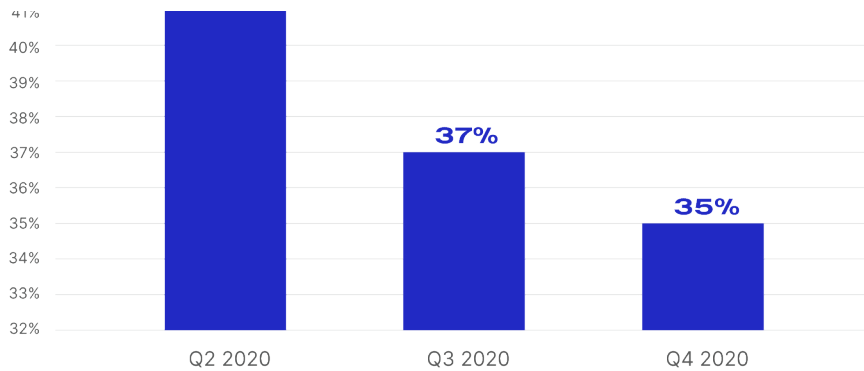
Media

Flexible, customizable subscription options helped media companies defend against churn.



According to Deloitte’s Digital Media Trends Survey, before COVID-19, the average U.S. consumer had 12 paid media and entertainment subscriptions.¹⁰ As reported in the same survey, since the pandemic began, 23% of U.S. consumers have added at least one new paid video streaming service. This is evidence of the growing popularity of streaming media. Subscription models help media companies to create subscriber-centric experiences, building ongoing relationships with their subscribers across whatever channels they choose.

In 2020, OTT media companies saw the highest rates of churn — or cancellation — in spring. When lockdowns relaxed in summer months, one may have expected viewers to step away from screens and cancel their OTT subscriptions, but rather, churn fell, nearly six percentage points by the end of the year.



Subscription media companies are well-positioned to address and reduce churn in the sector. Unlike a one-and-done transaction, subscription experiences allow subscribers to ease into their relationships with vendors and land on optimal solutions that meet their needs and preferences. According to a Deloitte study on media consumption habits in June 2020, 20% reported making changes to their music subscription.¹¹ And, according to research from the Subscribed Institute, providing customers the option to suspend then resume their subscription can effectively reduce churn.¹²

¹⁰Wescott, K., Downs, K., Loucks, J. Deloitte Digital Media Trends Survey: 14th Edition. Deloitte Insights. <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary.html>

¹¹Westcott, K., Loucks, J., Downs, K., Arkenberg, C., Jarvis, D. Digital media trends survey, 14th edition. Deloitte Insights. (June 2020). <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary.html>

¹²Konary, A. and Gold, C. Subscription Suspend/Resume: Impact on Churn Mitigation. The Subscribed Institute. <https://www.zuora.com/resource/subscription-suspend-and-resume-impact-on-churn-mitigation/>

¹³Subscribed Podcast (November 2020): <https://www.zuora.com/2020/11/17/subscribed-podcast-activates-michael-wolf-on-the-future-of-media-technology/>

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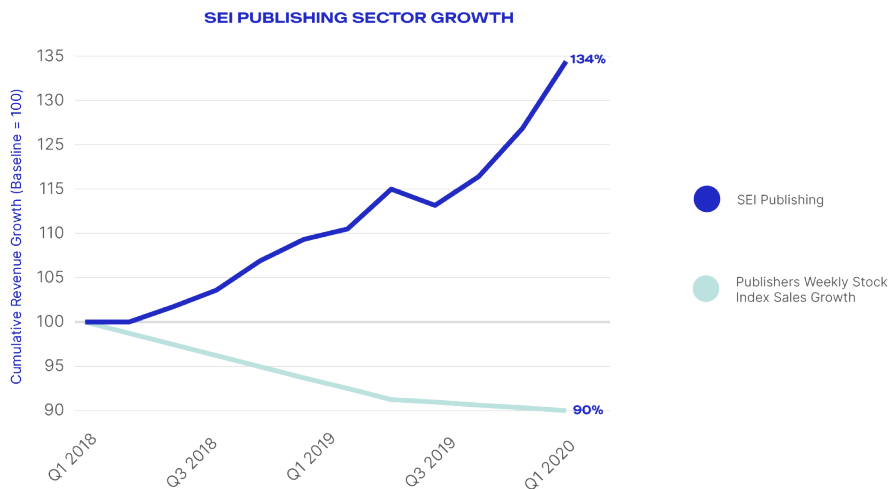
We recommend media companies leverage insights to improve the subscriber experience and place that experience at the center of the business.

“ Publishers know that what works is a direct relationship with a reading customer. If you can get \$100 from somebody, it’s better than getting 15% of some kind of revenue pool that isn’t going to pay the journalists in the newsroom. ”

– Ken Doctor, President, Newsonomics¹⁷

Publishing

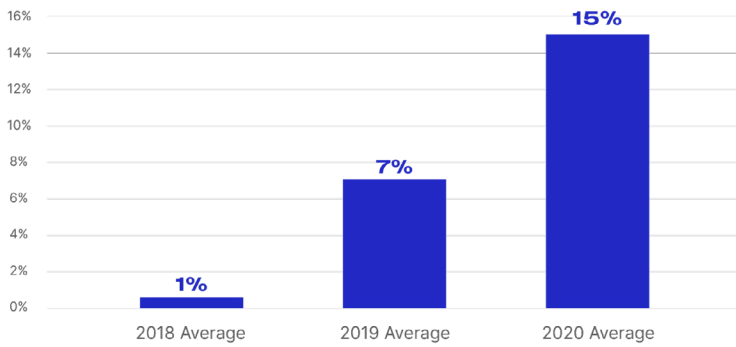
Publishing subscriptions filled a much-needed gap for readers in a historic year.



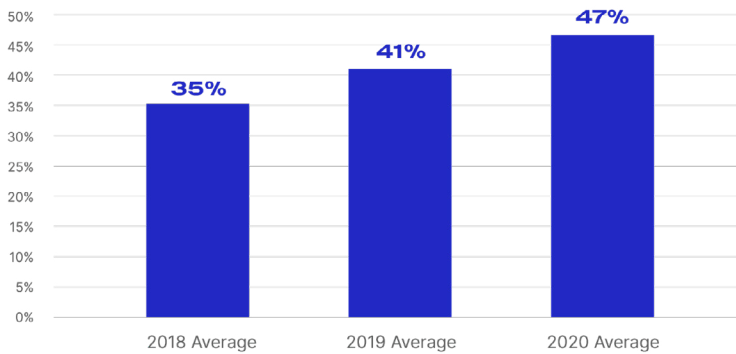
For years, the publishing industry has grappled with the challenges of declining ad revenue. According to PwC’s Media Outlook report, global newspaper advertising (print and online) will fall from \$49.2 billion in 2019 to \$36 billion in 2024, a decline of more than a quarter (27%) over five years¹⁴. Subscription publishing companies in the SEI grew revenue by 16% in 2020.

From the COVID-19 pandemic, to Brexit, to protests in response to racial injustice, to a monumental U.S. election, 2020 may go down as one of the most news-breaking years in the existence of digital publishing. Meanwhile, public trust in all sources of information reached record lows. Trust levels declined across traditional media, search engines, and social media — by eight, six, and five percentage points, respectively — and many readers turned to alternative information sources.¹⁵ Subscription publishers were able to supply crucial reporting to subscribers during this time by providing them with easy access and options for consuming the news. For instance, The Atlantic added 36,000 new subscribers in four weeks, even as they lifted paywall restrictions on coronavirus coverage.¹⁶

SEI HEALTHCARE SECTOR REVENUE GROWTH



PUBLISHING PERCENT MONTHLY BILLING



This year, publishers in the SEI experimented with new subscription billing models, including more monthly billing (over annual billing), which offers subscribers the option of smaller, more frequent payments.

Creative subscription models can help publishing companies offer readers customizable packages and seamless options to upgrade, suspend, or renew their accounts. Ultimately, innovative approaches in digital publishing can help expand access to information that matters.

¹⁴ PwC. Media Outlook Report 2020-2024: (2019). <https://www.pwc.com/gx/en/industries/tmt/media/outlook.html>

¹⁵ Edelman Trust Barometer 2021: Global Report. (February 2021). <https://www.edelman.com/trust/2021-trust-barometer>

¹⁶ Scire, S. NiemanLab. (April 2020). <https://www.niemanlab.org/2020/04/for-its-must-read-coronavirus-coverage-the-atlantic-is-rewarded-with-a-huge-surge-of-digital-subscriptions/>

¹⁷ Subscribed Podcast. July 2020: <https://www.subscribed.com/listen/podcasts/subscribed-podcast-ken-doctor-on-covid-19s-impact-on-publishing>

Recommendation:

To scale rapidly, we recommend subscription publishing companies offer their subscribers options to customize their pricing, packaging and, ultimately, their experience based on readers' preferences.

59

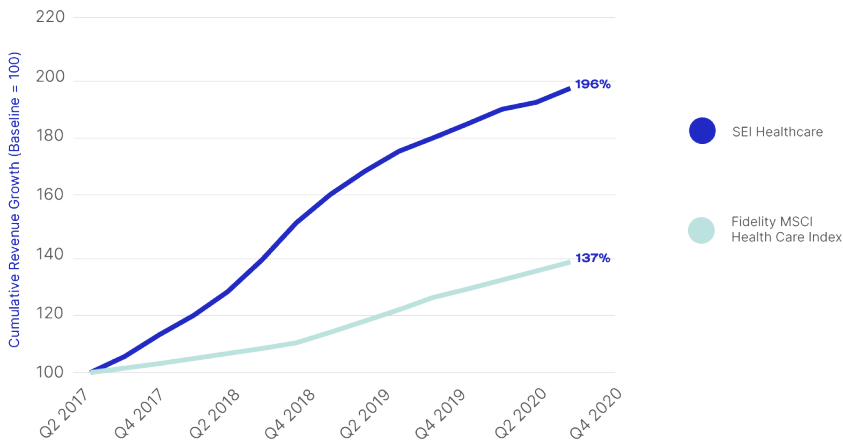
PERCENTAGE POINTS HIGHER

By the end of 2020, the SEI Healthcare sector was 59 percentage points higher than the Fidelity MSCI Health Care Index.

Healthcare

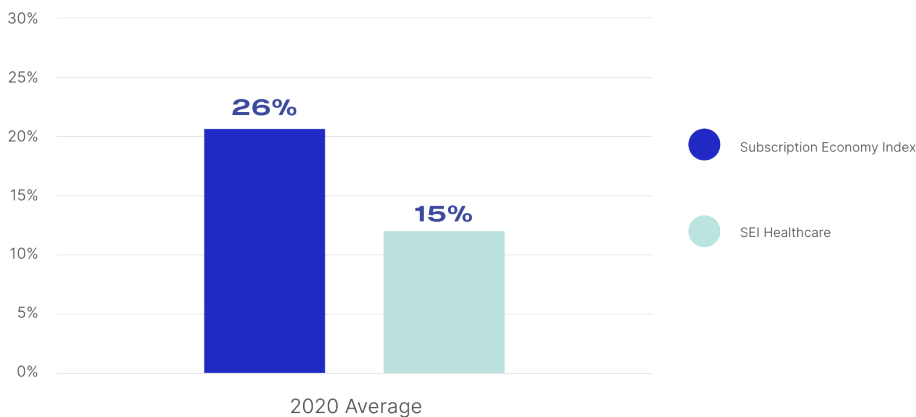
Subscription models offer solutions for the future of healthcare.

SEI HEALTHCARE SECTOR GROWTH



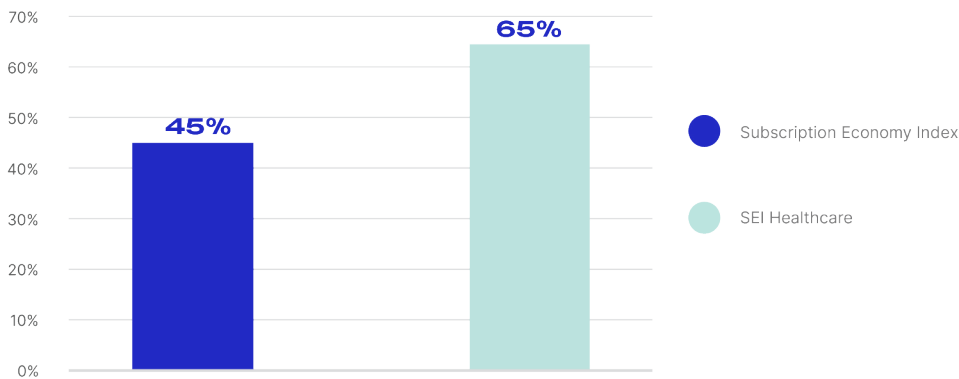
The past year has changed the trajectory of healthcare. Front and center is the need to provide wider, more affordable access — and to provide services remotely when possible. Subscription healthcare companies saw the lowest churn rates in the SEI, underscoring how vital relationships, customer-centric models, and flexible access are to this sector in particular.

SEI HEALTHCARE ACCOUNT CHURN RATE (ANNUALIZED)



Healthcare also utilizes the highest levels of usage-based billing in the SEI. Usage-based pricing is a way of quantifying the value of the product or service provided; it can take different forms, such as volume-based pricing, overage pricing, or tiered models. For each, the goal is to let customers — patients or healthcare systems — pay only for the services they need. Incorporating usage-based pricing makes it easier for companies to align and grow with customer needs and offer predictability to their customers. And, according to a Subscribed Institute benchmark on usage-based pricing, companies that have usage-based pricing that makes up between 1-50% of their overall revenue grew at 28% year-over-year (1.5 times higher than companies with no usage-based pricing at all).¹⁸

HEALTHCARE AVERAGE USAGE-BASED BILLING IN 2020 VS. SEI AVERAGE USAGE-BASED BILLING



Innovative pricing models are promising for healthcare because they can unlock access and affordability for patients. For example, rather than selling drugs at the highest viable price, pharmaceutical companies can enter into a subscription contract with healthcare systems with the goal of reaching the most possible patients.

¹⁸ The Subscribed Institute. Benchmark: Usage Based Pricing: <https://www.subscribed.com/article/subscription-economy-benchmarks-report-2/>

Recommendation:

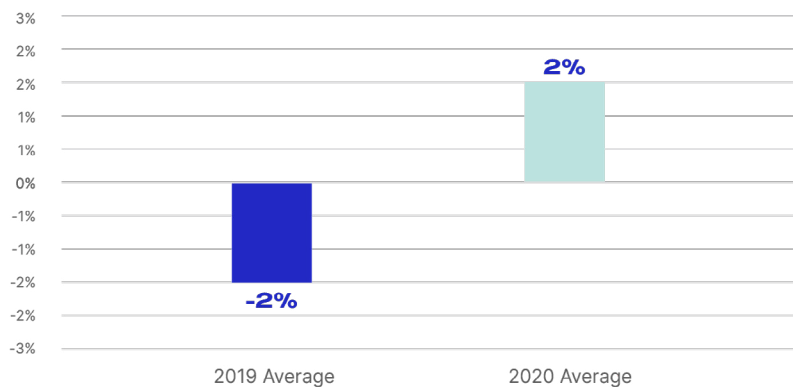
We recommend healthcare companies unlock innovative models for service provision and payment to reduce cost on health systems and expand access to patients.

Education in the SEI

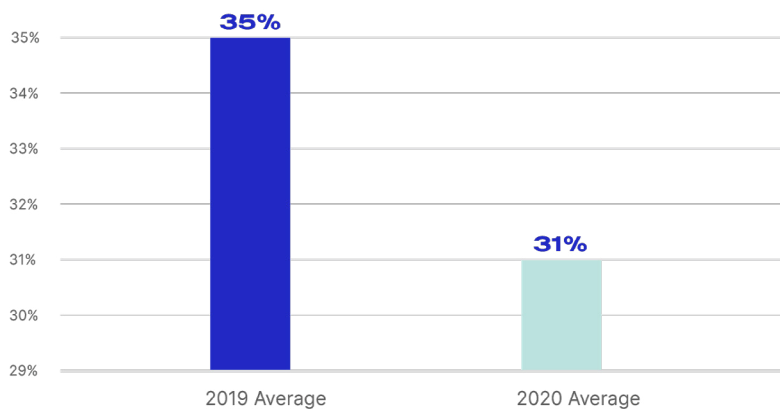
Subscriptions have a role to play in the future of education

According to UNICEF, more than 90% of countries established some form of remote learning policy due to the COVID-19 pandemic.¹⁹ In 2020, as compared to the prior year, education companies in the SEI saw an increase in net account growth (up 4 percentage points, and growing compared to last year's contraction) and a decrease in churn (also up four percentage points). In other words, there were more sign-ups to subscription education services, and fewer subscribers canceled their accounts.

SEI EDUCATION NET ACCOUNT GROWTH (ANNUALIZED)



SEI EDUCATION ACCOUNT CHURN RATE (ANNUALIZED)



¹⁹ COVID-19: Are Children Able to Continue Learning? UNICEF. (August 2020). <https://data.unicef.org/resources/remote-learning-reachability-factsheet/>

Recommendation:

To achieve growth, we recommend education companies continue to use customer data to customize offerings.

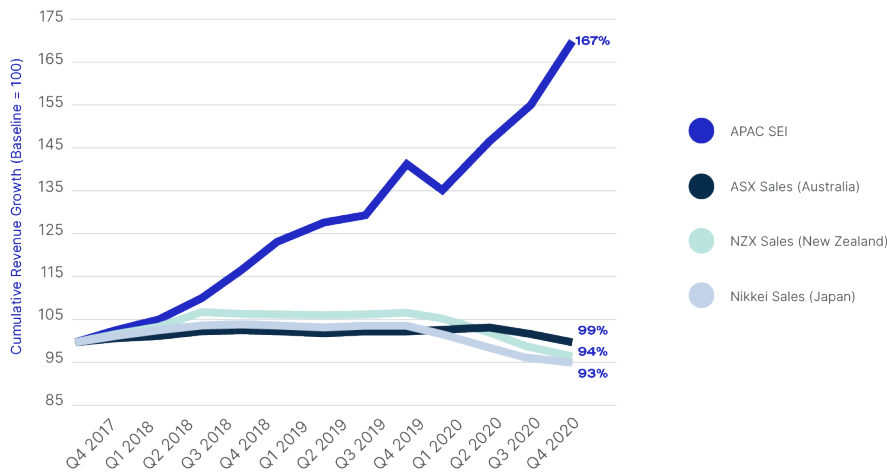


State of SEI by World Region

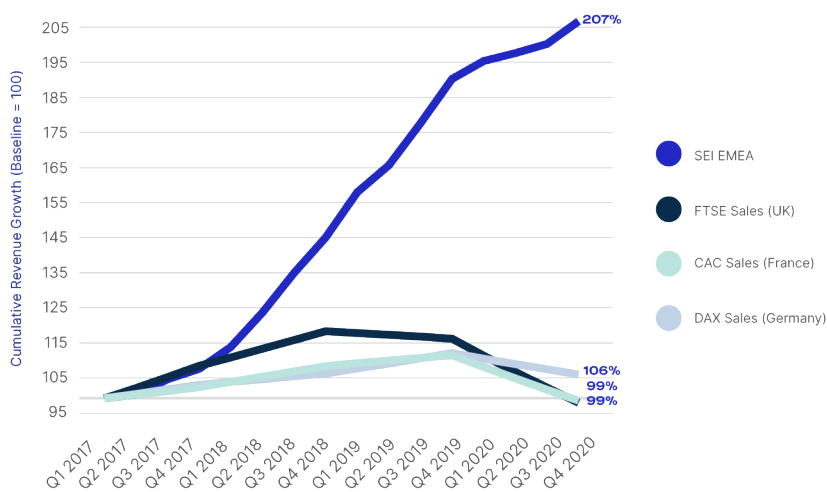
In APAC and EMEA, subscription companies surged when compared to stock markets.

Amid the pandemic, revenues for subscription companies in the SEI have ticked up in the last two quarters of 2020, whereas regional sales indices have continued to decline. Interestingly, in Q1, lockdowns and other safety measures seemed to slow subscription revenue growth (in APAC, revenue even contracted), but subscription revenue growth accelerated by Q4. This acceleration suggests that subscription companies were effective in adapting their offerings quickly.

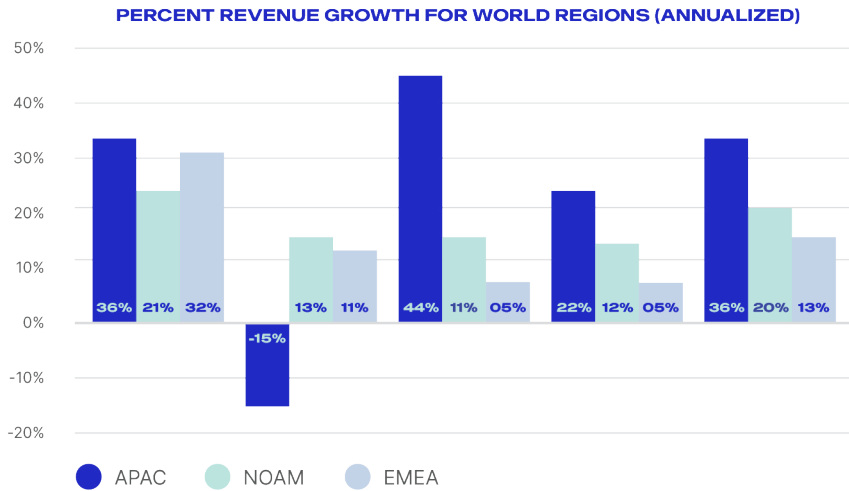
APAC SEI VERSUS COMPARABLE SALES GROWTH INDICES



EMEA SEI VERSUS COMPARABLE SALES GROWTH INDICES



While the APAC SEI region was the earliest impacted by COVID-19, and its growth rate, on average, fell earlier and steeper than other regions, it also recovered quicker and was the only region in the SEI where revenue growth rate increased on average from 2019 (20% growth rate) to 2020 (22% growth rate).



Recommendation:

We believe that the pandemic is helping to pave the way for the end of ownership in the future. We expect that in the eventual aftermath, customers won't forget the convenience, flexibility, and customization provided by the subscription economy. Globally, we recommend businesses deliver on these demands to keep customers engaged — and loyal — while establishing a competitive advantage.

Methodology

INTRODUCTION

The Subscription Economy Index™ (SEI) report measures the growth in the volume of business for subscription based products and services. The SEI report is based on anonymized, aggregated, system-generated activity on the Zuora billing service, and is intended to be indicative of the direction of the Subscription Economy® as a whole. The SEI report includes not only the main index but also a set of explanatory metrics that provide insight into the sources of growth (Growth Factors), as well as specialized indices focusing on particular business segments (Sub-Indices).

The index itself is an indicator that increases (or decreases) at the same percentage rate as the average volume of activity observed in tenants on the Zuora service. Such tenants are known as constituents of the index, for reasons that will be made clear below. Like many financial and economic indicators, the precise value of the index is nominal and defined by convention. In particular, the SEI data is defined to have a value of 100 on the historical date January 1st, 2012. After that time, each percentage change in the index corresponds to the same percentage change in the activity volume of an average constituent. So when the index climbed from 100 to 105, it means that on average the constituents of the SEI report had increased their activity volume by 5% over that time. When the index later climbs from 110 to 115, that corresponds to only $115/110 = 4.5\%$ growth.

THE SEI REPORT AS A MEASURE OF ORGANIC GROWTH

As will be described in detail below, the SEI report is designed so that it measures the organic growth of the constituents in the index and not the growth in the number of constituents. At its simplest, that means that the addition of constituents to the SEI report does not make it go up, in and of itself. Because the index grows at a rate that is the weighted average of the growth rates of the constituents, adding constituents to the SEI report only dilutes the weight assigned to all the other constituents. For that reason, adding constituents only makes the index go up if the new constituents' growth rates are higher than the average growth rate of the pre-existing cohort. Similarly, when constituents leave the SEI

report, that does not necessarily cause the index to go down. A constituent leaving the pool may be associated with contraction in that constituent prior to departure if the tenant leaves the Zuora service due to business failure at the owner company, but that is not necessarily the case.

The SEI report also removes the impact of non-organic growth in the system activity. Non-organic growth, for these purposes, means any increase in the activity in the Zuora service that is not reflective of the changes in the underlying fundamentals of the company owning the tenant in question.

The most common cases of non-organic changes in activity are account migration from another billing system to the Zuora service and voluntary decommissioning of a tenant by a company that was using the billing service. In contrast, declines in activity resulting from business failure remain part of the index calculation. These issues will be described in more detail below.

CRITERIA FOR INDEX CONSTITUENTS

Borrowing a term from stock market indices, a tenant on the Zuora service that produces activity used for calculating the SEI report is referred to as an index constituent. Not every tenant on the Zuora billing system will be an index constituent at any given time. The criteria for inclusion is simply a minimum length of time that a tenant must have been live on the Zuora billing system: The main purpose of this minimum is removing the effect of non-organic activity growth from the index calculation, as described above. Other considerations are removal of seasonality, and ignoring high rates of activity growth from insignificant base values. As described below, most companies using the Zuora billing service become index constituents after approximately two years live on the system.

BURN-IN PERIOD

In order to remove the effect of account migration from other billing systems, a minimum burn-in period of one year is applied to every tenant on the Zuora billing

system. That means that the first year of system activity for a constituent is simply ignored and never used as part of any calculation. The one year burn-in period also removes whatever growth comes immediately after a new company launch, when Zuora is the original billing system for a new product. This is sensible because high growth rates measuring growth from an insignificant base level are usually not sustainable in the long run. The burn-in period for a constituent may be longer than one year whenever there is known or suspected to be significant account migration from other systems even after this time. Note however that Zuora does not have perfect information about these events, and some migration of accounts from another billing platform may not be excluded (however, any extreme outliers will be removed as an outlier, as described below.)

CALCULATION PERIOD

As will be described in more detail below, revenue for the SEI report is measured in a one year rolling window. The purpose of the one year window is to remove the impact of seasonality. After the burn-in period, the next year of system activity for a constituent is used to establish the baseline for the measurement of future growth. As a result, a typical tenant using the Zuora service is first used as an index constituent when their one quarter growth is calculated two years and one quarter after they went live on Zuora system.

REMOVAL OF INDEX CONSTITUENTS

Decommissioning of tenants and the causes are tracked in the Zuora CRM system. System activity for a tenant is suspended from the SEI report calculation beginning in whatever quarter their decommissioning is noted, and whenever the reason is other than business failure. Business failure decommissionings are allowed to remain in the SEI report throughout the decommissioning as this reflects organic contraction on the tenant activity, while voluntarily decommissioning tenants are removed as that is a case of non-organic change in the activity. Note that this may fail to exclude migration of accounts from the Zuora system that preceded the acknowledgement of decommissioning; such migration off the Zuora system would appear as negative growth and may influence the SEI data calculation (however, any extreme points will be removed as an outlier, as described below.)

POST-LIVE INVOICE CONVERSION

Usually the migration of accounts and invoices from another billing system to Zuora occurs before or immediately after a tenant goes live on the platform. Occasionally a company converts accounts and invoices to the system at a later date. Whenever such a conversion is known to occur, the corresponding quarter(s) of system activity will be removed from the SEI report calculation for those companies. The data points for those companies will be filled as necessary with the average of the quarters before and after the conversion. Note that Zuora does not always have complete information about these events and it is possible that some post-live revenue conversion may go into the index calculation and would appear as growth (however, any extreme points will be removed as an outlier, as described below.)

MULTI-TENANT AND MULTI-ENTITY

In cases where a single parent company operates either multiple entities or multiple tenants in the Zuora system, the system activity for each entity or tenant is treated as if it were a separate constituent for purposes of SEI report calculations including burn-in, calculation and churn. A separate tenant is the specific case of multiple entities operating with fully separate product catalogues, databases etc. The base date for beginning the burn in period on a tenant or child entity is the later of the customer go-live date and the earliest date for which system activity for the tenant or entity is first processed.

CALCULATING CONSTITUENT GROWTH

Once a tenant on the Zuora service becomes an index constituent its activity is calculated every quarter with a one year rolling window. Many subscription businesses' activity are subject to seasonality, although the precise nature of the seasonal effect varies significantly. Using a one year window for SEI report calculations removes the effect of seasonality. This means that if the SEI data increases (or decreases) over any quarter it is because that quarter was better (or worse) than the same quarter one year prior; not the quarter immediately preceding it. The activity measure for SEI data calculation is the one year prior total of Invoice Item amounts generated from recurring and usage Rate Plan Charge objects in the Zuora object model database¹. One time charges are excluded from the calculation, as the SEI report is intended to reflect the growth in recurring activity. Whether Invoice Items are for recurring, usage or one time activity is given

by the Rate Plan Charge object linked to the Invoice Items in the model. Note also that any activity a constituent makes that is outside the Zuora system is ignored by the SEI report calculation. A consequence of this is that in cases where a division of a large corporation uses Zuora for a single product line then that constituent is treated as if it were a small company, independent of the larger organization.

Once the activity of a tenant in the SEI report has been calculated, the growth calculation for the SEI report is the quarterly change in the one year trailing activity expressed as a percentage. That is, the quarterly growth for a constituent is calculated as:

$$G_{\text{constituent}}^Q = \frac{A_{\text{constituent}}^Q}{A_{\text{constituent}}^{Q-1}} - 1$$

where A^Q represents the one year trailing activity ending with the quarter denoted Q and, and A^{Q-1} is the same but for the year ending with the prior quarter.

AVERAGE GROWTH AND UPDATING THE INDEX

The increase/decrease of the SEI report over any period in time is the average of the growth in activity for constituents who make up the SEI report at that time. However, the average growth used is not the simple average (or mean) – rather it is amount weighted average, subject to certain constraints.

OUTLIER REMOVAL

The first step taken in calculating the average is to remove outliers, those constituents in the SEI report having the largest increases or decreases in activity for each quarter. Outliers are defined as the top and bottom 5% of companies in the SEI report. The actual number to remove is rounded up to the nearest whole number, so for example if there were 100 constituents in the index then the top and bottom 5 companies are removed, but if there are 101 in the index then the top and bottom 6 companies would be removed. Removing outliers serves two purposes: First, the movement of the SEI report is meant to represent what happens to typical constituents in the SEI report. However, averages can be unduly influenced by the presence of very large values. Also, as noted above, the SEI report calculation does not contain perfect information about non-organic changes in activity (e.g. conversions, decommissioning of tenants

, etc.) Removing outliers helps to insure that even if such companies' system activity remains in the SEI report and do in fact do have extreme changes in their activity, then those changes will not influence the index.

WEIGHTING BY VOLUME OF ACTIVITY

In addition to reflecting what happens to a “typical” constituent, the SEI report is meant to reflect the amount of growth in the overall Subscription Economy outside of the Zuora service and the opportunities that are available to creators of and investors in Subscription Economy companies. For this reason, the weighted average used in the SEI report growth calculation is weighted by the total amount of activity each tenant has, so that companies with higher activity take more weight in the average. (Note the weighting is by the baseline amount of activity for each constituent, but not the growth in activity that is being averaged.) This is similar to the way that stock market indices are weighted by the market capitalization of their constituents and for the same reason: the indices are meant to represent the overall size of the market and the opportunity available to investors, so it is weighted more towards larger entities.

However, complete reliance on amount weighting may fail to reflect what is typical if a few very large constituents dominate the activity measured by the SEI report. For this reason the weight of any single constituent in the weighted average is limited to 5% of the total. In case any constituent would take more than 5% of the average weight in the SEI report (or a sub-index) based on their total amount of activity, then that weight is capped at 5% and the remaining weight is distributed proportionally to the other constituents in the pool; the process is iterated until all constituent weights are at or below 5%.

MINIMUM NUMBER OF CONSTITUENTS

Taken together, the outlier removal and weighting method determine the minimum number of constituents for calculating the SEI data or any sub-index of the SEI report (for which the same rules apply.) Capping weights at 5% implies there must be no less than twenty constituents. However, the twenty constituents must be available after outlier rejection, described above. The number of constituents to remove for the top and bottom 5 percentiles is rounded up to the nearest whole number, so that for more than twenty constituents the two highest and two lowest activity growth numbers are removed from the average.

This means the minimum possible number of constituents to calculate the SEI report or one of its sub-indices according to these rules is twenty four, and the SEI report uses a minimum of twenty five for simplicity.

INDEX UPDATE

Given the growth of all constituents over the prior quarter and the weights to use in the average, the average growth is simply the sum of all the constituents' growth rates multiplied by their weight (note that all the weights add up to one, so this is a proper weighted average.)

One plus the average growth rate is then multiplied by the prior index level to arrive at the new index level. That is,

$$SEI^Q = SEI^{Q-1} \times (1 + G^Q)$$

where SEI^Q is the new index level, SEI^{Q-1} is the index level after the last quarterly update, and G^Q is the average constituent growth over the most recent quarter.

GROWTH FACTORS

The SEI report measures the amount of growth in the Subscription Economy, but a single indicator does not give insight into what is driving it. A related set of metrics help to explain the sources of that growth. These metrics are called the Growth Factors of the SEI report. Like the percentage change in activity used in the SEI report calculation, the Growth Factors are averages of percentage changes in other activity based measurements. Unlike the SEI report, the Growth Factors are not used to update an index – they are simply provided as explanatory information each quarter. The growth factors use a simple two step decomposition to explain why the SEI report went up (or down) in any given quarter.

ARPA AND NET ACCOUNT GROWTH

If the total amount of a company's activity go up that means at least one of two things must have happened: Either the number of accounts generating the activity went up, or the amount of activity for existing accounts went up. The total of Invoice Item amounts is analogous to the accounting measure of revenue, so it is referred to using the accounting term Average Revenue Per Account or ARPA. This is the first level of the SEI report's Growth Factor decomposition: overall activity growth is decomposed into growth in ARPA and growth in the number of accounts. The latter is referred to as Net Account Growth, to distinguish it from specifically new

(added) accounts. Changes in ARPA are closely related to upsells and downsells: If ARPA is growing, then upsells and price increase must be outweighing downsells and discounts.

To calculate the growth factors for ARPA and Net Account growth, the number of accounts with activity in the past year is measured on each quarter end date for all the constituents. ARPA is calculated simply as annual activity divided by the number of accounts. Next, the quarterly percent changes in ARPA and the number of accounts is calculated for all constituents (similar to the calculation for quarterly percent change in overall annual activity, described above.) Finally, the averages of ARPA growth and Net Account Growth are calculated using the same weights as the SEI report (overall activity weighting, subject to constraint.) These averages are the Growth Factors for ARPA and Net Account Growth. When combined with the SEI report's change for any time period, these show whether SEI report's growth (or declines) was driven by increases/decreases in activity on existing accounts or by changes in the overall number of accounts, or both.

Note that for a single tenant in the SEI report, the following relationship holds exactly:

$$(1 + G^Q) = (1 + G_{ARPA}^Q) \times (1 + G_{\# \text{ of Accounts}}^Q)$$

where G indicates the percentage growth of the measurement indicated for some quarter. Also, for low levels of growth it is approximately true that:

$$G^Q \approx G_{ARPA}^Q + G_{\# \text{ of Accounts}}^Q$$

Meaning, when the growth is small the total growth is close to the sum of the two components. However, the SEI report's growth factors are averages over many constituents and the multiplicative relationship shown above will only be approximately correct. This is because an average of a product of two sets of measurements is not the same as the product of the averages of the same two sets of measurements – the relationship is nonlinear. The additive relationship is even less accurate for the Growth Factors, as it involves one more level of approximation. So the growth of the SEI report is not simply the sum of the ARPA and Net Account Growth Factors, though it will often be close. And comparing these two Growth Factors still gives a powerful explanation into what caused the SEI report to grow in any given quarter.

ACCOUNT GROWTH AND CHURN

The net change in the number of accounts can be further decomposed into two components: addition of new accounts, and loss or churn of existing accounts. These additional growth factors provide insight into what is driving net changes in the number of accounts. This extra level of decomposition is important because new account additions and losses to churn are driven by two different processes: New additions are the result of marketing and sales efforts; while churns are driven by satisfaction/dissatisfaction of the existing customer base.

Companies calculate growth and churn of accounts in many different ways. The SEI report's growth factors use a simple calculation that makes results comparable across the wide variety of companies in the SEI report, and is consistent with the calculation of the SEI report's main index and the other Growth Factors. The definition are as follows:

1. New account additions are defined as any account that had activity in the last quarter, but had no activity the prior year (the prior four quarters.)
2. The Account Growth rate is defined as the number of new accounts added in a quarter divided by the number of accounts at the start of the quarter.
3. Churns are defined as an account that has had no activity in the last year (4 quarters), but last had activity in the quarter prior to that. To explain churn another way, suppose an account had activity in Q2 some year; if Q2 of the next year passes and the account has not had activity again at all in that year, then the account is considered a churn at in Q3 (up to one year and one quarter after the last activity.)
4. The churn rate is defined as the number of churns in a quarter divided by the number of accounts at the start of the quarter.

Many companies use different definitions for these metrics, and those choices are often made based on the typical customer lifespan, re-signup behavior etc. Naturally, any definition applied to a diverse pool of companies will not be perfectly suited to every type of tenant in the Zuora service. The SEI report definitions were chosen to remove the effects of seasonality and for consistency with the annual activity calculations used by the SEI report.

RELATIONSHIP TO REVENUE BASED RETENTION

Many subscription companies report revenue based retention and churn, and it is also common to include the impact of upsells in this metric. This is useful because this one metric captures much about the health of the existing customer base. To calculate an amount that is analogous to revenue based retention including upsells from the SEI report's Growth Factors start by noting that account based retention is simply 100% minus account based churn. So the SEI report's analog to revenue based retention including upsells is calculated by multiplying the account based retention by one plus ARPA growth.

That is:

$$R = (1.0 - C) \times (1 + G_{\text{ARPA}})$$

where C is the churn rate and G^{ARPA} is the ARPA growth rate as described above.

SUB-INDICES

In addition to providing insight about the direction of the Subscription Economy overall, it is useful to know about the differences between various categories of companies. To support this, the SEI report's method is also applied to specific subsets of the constituents I. Borrowing terminology from stock market indices these constituent groups and their associated measurements are known as sub-indices. Once the classifying criteria for a sub-index are defined, the same methodology is applied to that pool of constituents as is used for the main SEI report. The only requirement for creating an SEI sub-index is that the category must have a minimum number of 25 constituents, as described above. However, for two sub-indices a smaller number than 25 was used with the same methodology described above.

A variety of classifications are used to define sub-indices. Examples include the Business Model, Industry, Vertical, and Revenue Band. Additional classifications may be applied in the future, or combinations of classifications. These classifications are provided by the data providers InsideView and Datafox and applied to the billings system measurements via Zuora's CRM system. For the manufacturing and publishing sectors, categorization by either vendor is used. For other sectors, InsideView alone determines the categorization.

The IoT sector is determined by an internal categorization method based on subscription product characteristics, because the commercial data vendors do not yet recognize IoT as a separate category.

PRICING AND PACKAGING STATISTICS

Pricing and packaging statistics include measurements like the amount of free trials and discounts that are offered, the amount of customers that pay through usage based billing, the frequency with which customers renew, and other measurements of how customers buy their subscription services. The pricing and packaging metrics are measured using anonymized, aggregated, system-generated activity on the Zuora billing service, and is intended to be indicative of the prevalence of these practices in the Subscription Economy® as a whole. Averages of pricing and packaging metrics are reported for subindices using outlier removal, as described above. However, averages of pricing and packaging statistics are not weighted by revenue as described above for the growth metrics.

SOURCES

S&P Dow Jones Indices

<http://us.spindices.com/indices/equity/sp-500>

US Census Bureau, "Monthly Retail Trade and Food Services"

<https://www.census.gov/econ/currentdata/S&startYear=1992&endYear=2016&categories=44000&dataType=SM&geoLevel=US&adjusted=1¬Adjusted=1&submit=GET+DATA&releaseScheduleId=>

McKinsey, "Grow Fast or Die Slow"

<http://www.mckinsey.com/industries/high-tech/our-insights/grow-fast-or-die-slow>

Sector and Region specific Stock Market Index Sales Growth, except for Publishers Weekly Stock Index, S&P 500 Media Sub-Index, S&P 500 Professional Services Sub-Index

<http://www.etfresearchcenter.com/>

Publishers Weekly Stock Index constituents

<https://www.publishersweekly.com/pw/by-topic/industry-news/publisher-news/article/80632-book-biz-stock-sank-over-past-six-months.html>

S&P Media Sub-Index and S&P 500 Corporate Services Sub-Index Constituents

https://wikipedia.org/wiki/List_of_S%26P_500_companies

Corporate services is defined as all companies with sub-sectors in Commercial Printing, Environmental & Facilities Services, Office Services & Supplies, Diversified Support Services, Security & Alarm Services, Human Resource & Employment Services, Research & Consulting Services

Media is defined as all companies with sub-sectors in Interactive Media & Services, Movies & Entertainment, Advertising, Broadcasting, Interactive Home Entertainment

Sales Growth for Publishers Weekly Stock Index, S&P 500 Media Sub-Index, and S&P 500

Corporate Services Sub-Index

<https://www.sec.gov/edgar.shtml> : Annual 10-K Reports

Euro Zone Growth Rates

<https://tradingeconomics.com/euro-area/gdp-growth-annual>

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FORWARD LOOKING STATEMENTS

This report contains forward-looking statements that involve a number of risks, uncertainties, and assumptions, including but not limited to statements regarding the expected growth and trends of subscription-based companies (including companies in the SEI report) and non-subscription based companies. Any statements that are not statements of historical fact may be deemed to be forward-looking statements, and actual results could differ materially from those stated or implied in forward-looking statements. This report also includes market data and certain other statistical information and estimates from industry analysts and/or market research firms. Zuora believes these third party reports to be reputable, but has not independently verified the underlying data sources, methodologies, or assumptions. Information that is based on estimates, forecasts, projections, market research, or similar methodologies is inherently subject to uncertainties and may differ materially from actual events or circumstances.



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