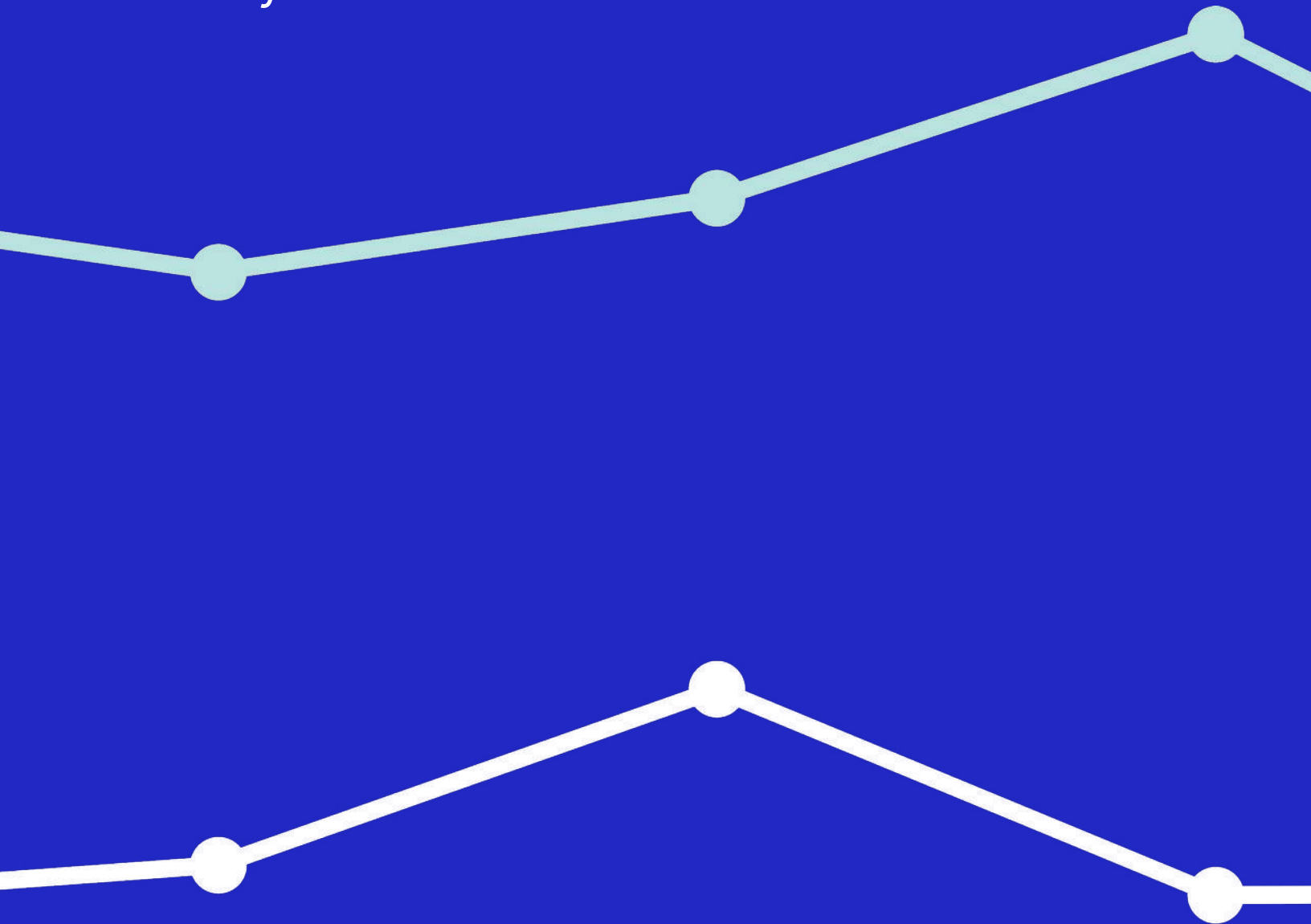


zuora

The Subscription Economy Index™

February 2022



Subscribed
Institute ●

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Introduction

SUBSCRIPTIONS: GROWTH PROVES ENDURANCE AS NEW CUSTOMER BEHAVIORS ARE CEMENTED

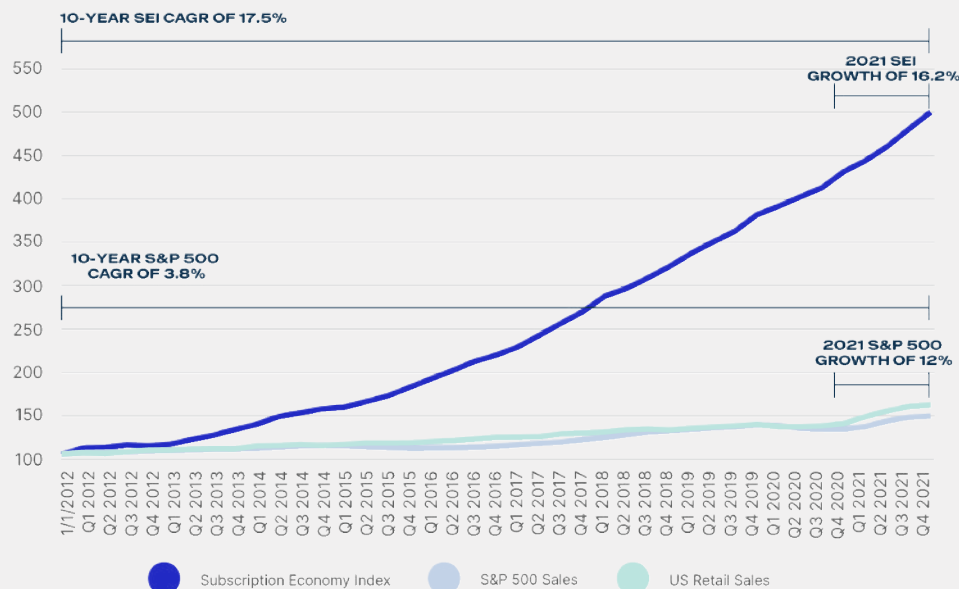
The world witnessed significant changes sparked by the pandemic, and as a result we have changed. In 2020, companies and consumers woke up to the power of digital service models. These services continued to gain momentum in 2021 as the economy began to recover.

Our lives are increasingly defined by technology, and technology is increasingly defined by software and complementary services. This includes business models rooted in recurring customer relationships that users subscribe to, such as ongoing digital services and consumption-based models. As a result, customers have established new habits and behaviors.

Subscriptions have provided resilience at key moments of uncertainty, and enthusiasm for these services continues to grow, as seen by the companies that comprise the Subscription Economy Index™ (SEI) report. Over the past decade, the Subscription Economy Index has grown 4.6x faster than the S&P 500, which represents more traditional, product-based businesses (compound annual growth rates, or CAGR, for the 10-year period were 17.5% vs. 3.8%, respectively (Table 1)).

In 2021, while companies in the S&P 500 began to recover from 2020 lows, subscription businesses in the SEI continued to thrive, outpacing traditional businesses with 16.2% revenue growth compared to 12% for the S&P 500 (Tables 1 and 2).

**THE SUBSCRIPTION ECONOMY INDEX LEVEL
VERSUS S&P 500 AND US RETAIL SALES (TABLE 1)**



Research from Zuora's Subscribed Institute shows that 70% of subscription revenue on average comes from existing customers.¹ Churn rate is a metric that can measure the health of businesses with recurring revenues. (A high churn rate can generally indicate that a subscription business has lower customer lifetime value and possibly reduced revenue potential.) Churn rates continued to decline in the latest report, reaching lower than pre-pandemic rates, suggesting an ongoing commitment to subscription services (Table 4).

New technologies, along with changes in our consumer and business lives that were accelerated during the pandemic, have contributed to the rise of new digital services that are monetized via subscription or consumption approaches. Consumers are increasingly opening their wallets to premium services that offer enhanced experiences, and the valuable services that smart devices enable are now entrenched in the way we live. This latest report corroborates prior SEI reports that have shown that customer adoption of these digital services, and the subscriptions that monetize them, are proving to be enduring. Furthermore, the growth and churn trends illustrated in this report suggest that these behavioral changes could be permanent.

It's no longer a question of when things will return to the way they were, but what opportunities exist in this new reality.

¹Zuora, "Subscription Economy Benchmarks," August 2020
http://info.zuora.com/rs/602-QGZ-447/images/Zuora_Subscription_Economy_Benchmark_1_Subscription_Growth.pdf

Definitions & Terminology

SEI SECTORS

- **The Software as a Service (SaaS) Index** includes providers whose software is accessed via the cloud, and monetized via subscriptions, including traditionally perpetual software shifting to SaaS. This includes SMB SaaS, B2Every SaaS, and Enterprise SaaS companies.
- **The Media Index** includes content providers, over-the-top (OTT) streaming media companies, television and radio broadcasters, cable operators, search and navigation services, editing services, and production companies. It also includes publishers of newspapers, magazines, and books, as well as educational content providers, and corporate research providers.
- **The Manufacturing Index** includes fabrication services, industry-specific software providers, industrial design, heavy equipment, and tool manufacturers.
- **The IoT Index** includes a broad mix of several industries including security, technology, energy, transportation, scientific instruments, and construction. All companies in this index manage digital services based on connected hardware.
- **The Business Services Index** includes management consulting, legal assistance, data services, market research, staffing and recruitment, marketing and advertising, and records management.
- **The Communications/Video Conferencing Index** includes video conferencing, satellite communications, broadband networks, digital infrastructure, and fiber networks.

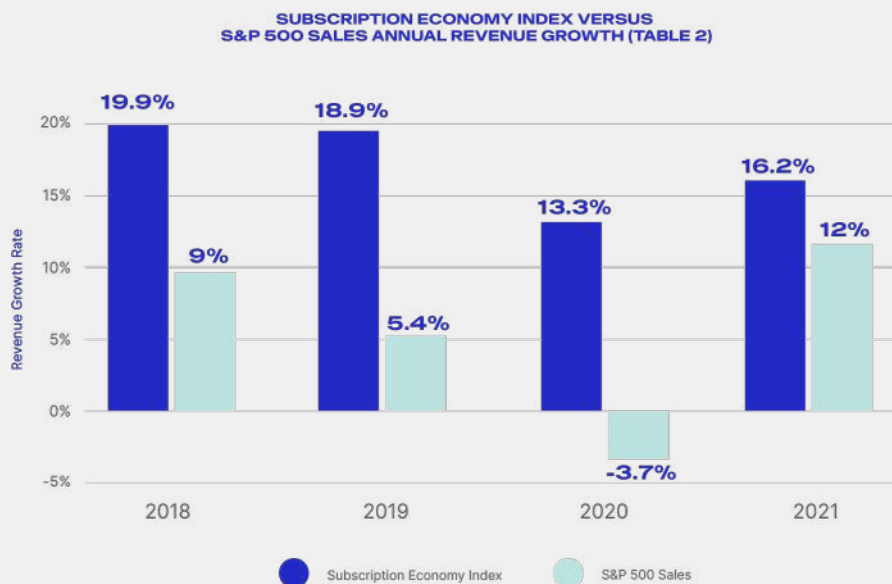
TERMINOLOGY

- **Compound Annual Growth Rate (CAGR):** This is the mean annual growth rate of an index over a specified period of time longer than one year. This is calculated by dividing the ending value by the beginning value over the time period, raised to an exponent of one divided by the number of years between the beginning and ending values, subtracted by one, then multiplied by 100.
- **Account Churn Rate:** Also known as the rate of customer attrition or customer churn, this is the rate at which customers stop doing business with a company over a specific period of time. This is calculated by dividing the number of attrited or churned customers over the time period by the total number of customers at the start of the time period, then multiplied by 100.

Key Findings

The Subscription Economy[®] in Five Figures

1. SEI ANNUAL REVENUE GROWTH IS BOUNCING BACK (TABLE 2).

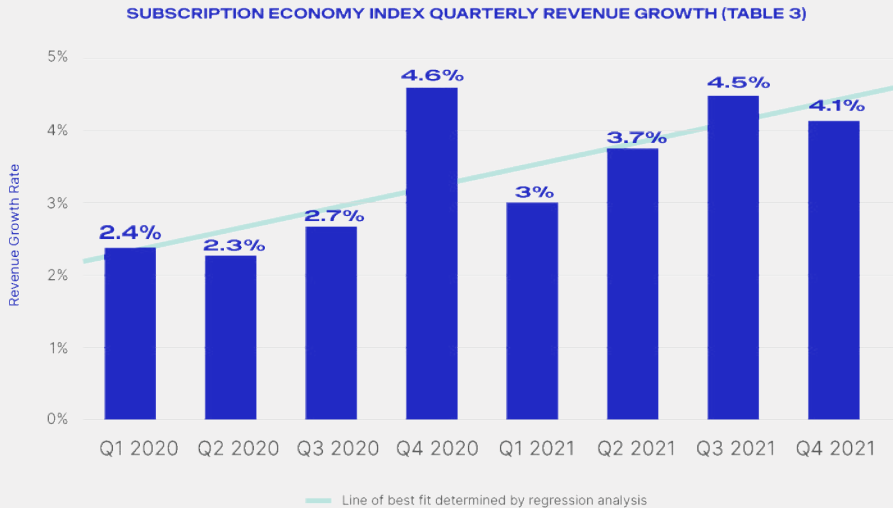


While the SEI has continued to grow at double-digit rates over the past four years, we still notice a pandemic-driven dip. These subscription-based businesses began to recover in 2021 (from 13.3% to 16.2%), but growth has still not caught up to pre-pandemic levels.

In contrast, the S&P 500 saw single-digit growth before the pandemic. The impact of COVID-19 caused the index to initially contract in 2020 by -3.7%, and even though it experienced a notable recovery in 2021, the 2021 growth rate remained lower than the SEI at 12%.

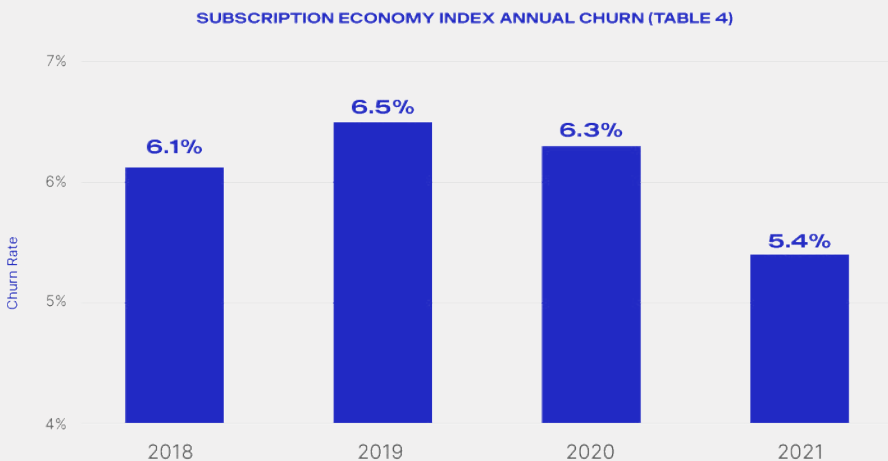
The Subscription Economy in Five Figures

2. SEI QUARTERLY REVENUE GROWTH CONTINUES ON A POSITIVE GROWTH TRAJECTORY (TABLE 3).



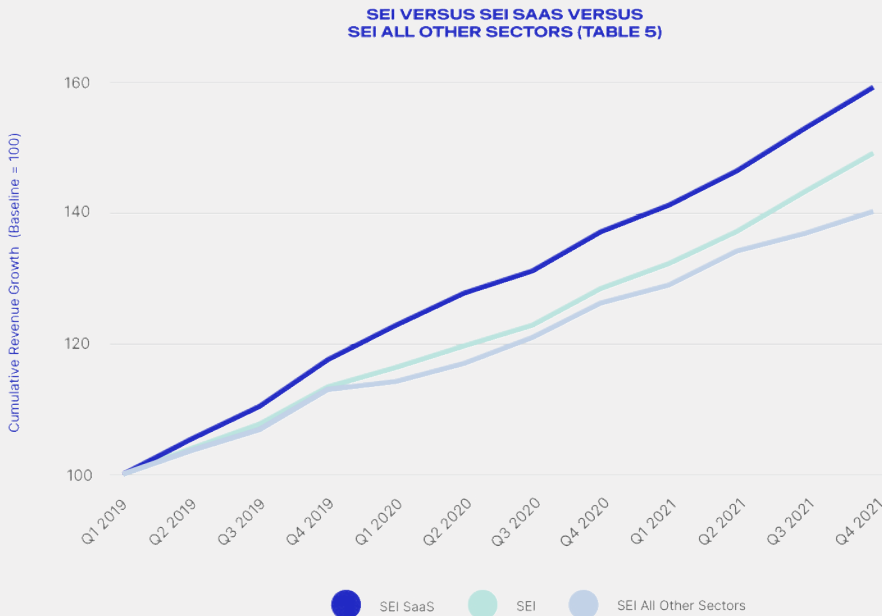
While SEI quarterly revenue growth decreased in the first half of 2020, it then experienced an upward trend over the next six quarters. The current trajectory suggests that we may see a return to pre-pandemic levels (although early 2022 will reveal the impact of the Omicron variant).

3. CHURN RATES CONTINUE TO DECLINE (TABLE 4).



Although churn levels have remained relatively stable over the past few years, churn significantly dropped, with a 14% improvement to 5.4% from 2020 to 2021. While many factors are likely driving the lower churn rate, greater emphasis on improving customer journeys and service levels often contributes to retention improvements.

4. SAAS CONTINUES TO OUTPERFORM OTHER SECTORS IN THE SEI (TABLE 5).



SEI SaaS continues to outperform other sectors in the index. Interestingly, SEI SaaS has shown no sign of slowdown during the pandemic, leading to a wider performance gap compared to the overall SEI and the other five sectors. The SaaS sector's performance is likely attributed to its more refined set of subscription practices, since SaaS businesses adopted the subscription-based model earlier than many other sectors.²

5. THE SEI HAS EXPERIENCED ANNUAL DOUBLE-DIGIT GROWTH OVER THE LAST FOUR YEARS ACROSS ALL SECTORS.

Each sector of the SEI has seen double-digit compound annual growth rates (CAGR) from 2018–2021, which are notably high based on industry standards. Each sector's CAGR is included in the corresponding State of SEI by Sector section.

² Zuora, "How to nail the "land and expand model" to drive subscription growth," February 2021 <https://www.zuora.com/resource/how-to-nail-the-land-and-expand-model-to-drive-subscription-growth/>

State of SEI by Sector

“ As the product grows and as your customer changes, you’ve got to be flexible enough to iterate and make sure that your customer experience is reflective of what you offer. You have to have the infrastructure and process in place so that, as your product innovates, your customer experience can innovate along with it. ”

– Georgiana Laudi, SaaS Growth Advisor, Elevate³

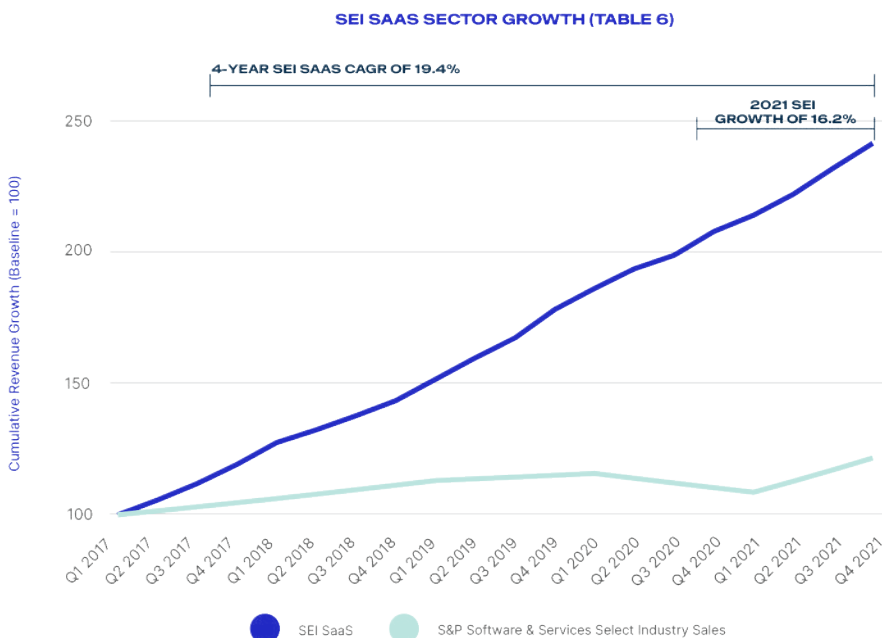
SaaS

SaaS continues to be the fastest-growing sector in the SEI, with both business-to-consumer (B2C) and business-to-business (B2B) SaaS driving growth. The gap between SEI SaaS growth and the rest of the SEI also continues to widen as SaaS subscriptions mature, given SaaS companies adopted subscription-based services earlier than many other industries in the SEI (Table 5)⁴. With this maturity, subscription SaaS natives benefit by starting with foundational revenue built in at the start of each year, increasing opportunity for innovation.

While employees continued to work remotely in 2021 (Owl Labs found that nearly 70% of all full-time employees in the United States worked or are still working from home due to the pandemic⁵), SaaS subscriptions, such as collaboration software, continued to grow. SEI SaaS companies demonstrated revenue growth of 16.2% on average in 2021 (Table 6).

Nearly
70%

of all full-time employees in the United States worked or are still working from home due to the pandemic⁵



³ Georgiana Laudi, “Georgiana Laudi on Customer-Led Growth,” podcast, Subscribed.com, 2021.

<https://www.subscribed.com/listen/podcasts/georgiana-laudi-on-customer-led-growth>

⁴ Zuora, “How to nail the “land and expand model” to drive subscription growth,” February 2021.

<https://www.zuora.com/resource/how-to-nail-the-land-and-expand-model-to-drive-subscription-growth/>

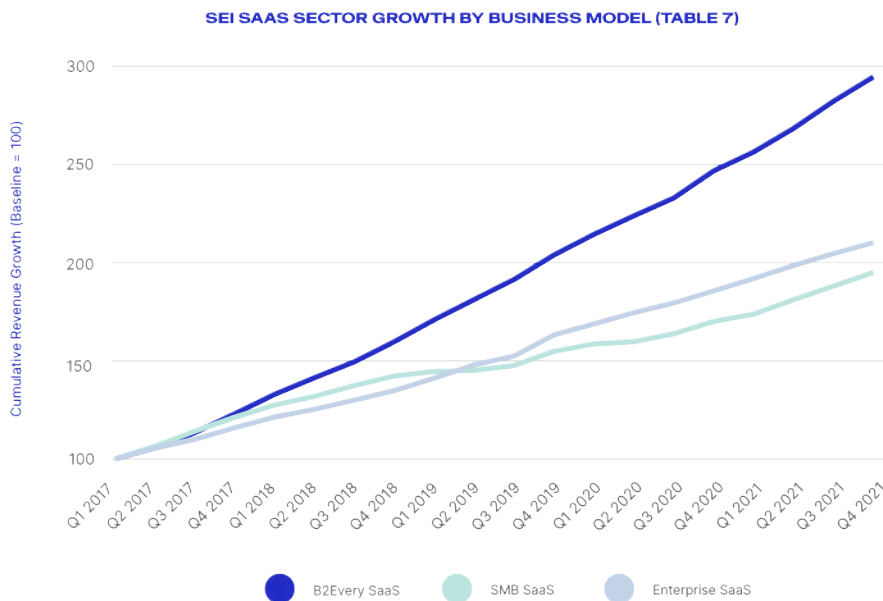
⁵ Owl Labs, “State of Remote Work 2021,” 2021. <https://owllabs.com/state-of-remote-work/2021/>

SaaS companies in the SEI typically employ many of the tactics recommended to supercharge growth.⁶ For example, these businesses often implement usage-based pricing (also known as consumption-based pricing). This allows a customer to start at a low cost, making entry easier while preserving the ability to gain more from purchases over time, since the price is directly tied to the value a customer receives.⁷

B2Every SaaS Surges

Companies that comprise the SEI SaaS sector are assigned to one of three distinct categories: B2Every, SMB, and Enterprise. B2Every SaaS represents companies that market and sell software or platforms as a service to both consumers and businesses. SMB SaaS represents companies that market and sell software or platforms as a service to small and medium-sized businesses. And Enterprise SaaS represents companies that market or sell software or platforms as a service to large businesses.

For the past four years, B2Every SaaS has consistently outperformed both SMB SaaS and Enterprise SaaS (Table 7).



This trend is likely due to B2Every SaaS’ market potential, as more companies recognize they can sell their products to multiple constituents, including both businesses and consumers. A company such as DocuSign, for example, fits in this category because it targets several markets, including enterprise, small and medium-sized businesses, and individuals.

⁶ Zuora, “How to Nail the ‘Land and Expand’ Model to Drive Subscription Growth,” February 2021. http://info.zuora.com/rs/602-QGZ-447/images/SL_%26_BCG_Report.pdf

⁷ Anna Helm, “Why more SaaS companies are shifting to usage-based pricing,” TechCrunch, November 2021. <https://techcrunch.com/2021/11/04/more-saas-companies-are-shifting-to-usage-based-pricing>

SaaS Recommendation:

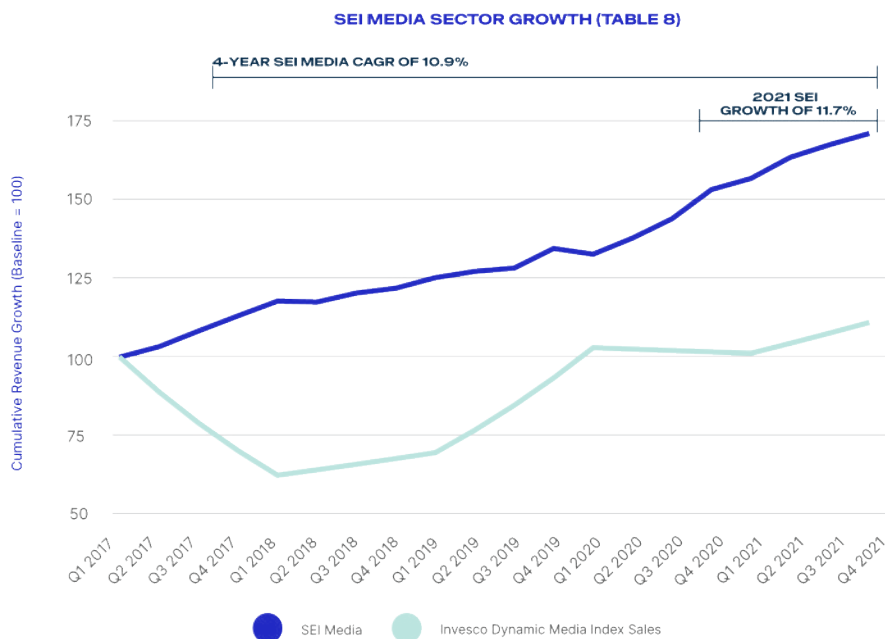
As seen by the growth in 'B2Every SaaS,' offering flexible and scalable options creates broader appeal in both the enterprise and consumer market. SaaS companies should continue to explore next-generation offering design and adjacent services. Increased adoption of usage-based pricing helps align the value of what the customer receives and services provided, providing an opportunity to gain greater clarity on what customers value and how best to address their needs.

“ After a historic and challenging year, US consumers have become more reliant than ever on media for entertainment, information, and social connection. The pandemic has accelerated pre-existing industry trends and altered entertainment-related behaviors... ”

– Deloitte Insights Digital Media Trends Survey⁸

Media

The Media sector of the SEI focuses on audience relationships—ongoing relationships where individuals want to subscribe to regularly distributed content such as movies, music, publications, gaming, or photography. In the past year, media subscription momentum (both in the SEI and beyond) suggests that even after 2020 shelter-in-place orders were lifted, many consumers maintained their new media subscriptions. In 2021, SEI companies in the Media sector demonstrated revenue growth of 11.7% on average, higher than pre-pandemic growth rates (Table 8).



⁸ Deloitte Insights, “Digital Media Trends Survey,” April 2021. <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary.html>

OTT subscriptions in particular have seen the biggest success. OTT video users are projected to reach almost four billion by 2026,⁹ and OTT subscribers in the US are already spending nearly two hours per day using these services.¹⁰ In 2021, Netflix reached more than 220 million paid subscribers, generating \$7.5 billion in revenue.¹¹ As a first entrant with a very large market share, while Netflix's maturity means overall growth has reduced, its customer retention remains very strong despite high levels of competition. And since its launch two years ago, Disney+ has grown to 118 million subscriptions, with new subscribers increasing 60% year-over-year.¹²

⁹ Statista, "OTT Video", <https://www.statista.com/outlook/amo/media/tv-video/ott-video/worldwide, 2021>

¹⁰ Insider Intelligence, "US Time Spent with Media 2021," July 28, 2021. <https://www.insiderintelligence.com/insights/us-time-spent-with-media/>

¹¹ Edmund Lee, "Netflix beats estimates and expects even better results thanks to hits like "Squid Game," New York Times, October 2021. <https://www.nytimes.com/2021/10/19/business/media/netflix-earnings-q3-2021.html>

¹² Elizabeth Foster, "Disney's direct-to-consumer revenue is up 55%" kidscreen, November 2021. <https://kidscreen.com/2021/11/11/disneys-direct-to-consumer-revenue-is-up-55/>



Media Recommendation:

Successful media and publishing companies should focus on creating digital subscription offerings in line with their audience reach, frequency, and monetization objectives. In particular, content cleared for multiple distribution channels can drive more revenue opportunities via expanded subscription services. We recommend that this emphasis on customer preferences and experiences becomes a top priority in developing flexible, scalable, and personalized subscription services with agile offer tiers for highest revenue impact.

“ The trend of using subscription business models in business-to-consumer (B2C) and business-to-business (B2B) software has been an inspiration for many traditional manufacturing players to transform (part of) their business models—switching from a traditional product-focused one-off sale to an outcome-based focus on service to improve the performance and capture a powerful competitive advantage. ”

– Kearney Report “Riding the wave of subscription business models in Manufacturing”¹³

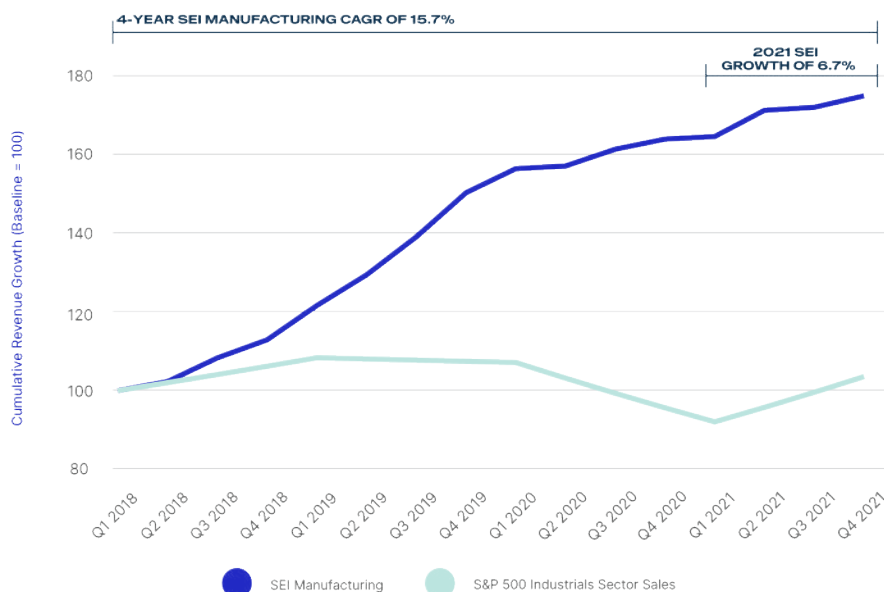
Manufacturing

Connected services are continuing to fuel the growth of the Manufacturing sector as companies look to complement physical products with innovative offerings. Traditional manufacturers in the S&P 500 Industrials Sector experienced increased demand in 2021 after the 2020 pandemic dip, but SEI Manufacturing businesses also continued to grow, with 6.7% revenue growth on average for 2021 (Table 9).

While SEI Manufacturing growth is slower than other sectors in the SEI, it showed considerable resilience compared to the eight successive quarters of decline the S&P 500 Industrials suffered from 2019–2020. The Subscription Economy provides a new monetization route through digital connectivity, usage of available data, and recurring services for an industry that is showing signs of growth stagnation, while facing rising input costs and declining margins.

6.7%
revenue growth
on average for
SEI Manufacturing
businesses in 2021

SEI MANUFACTURING SECTOR GROWTH (TABLE 9)



Automotive subscription services have seen notable recent momentum within manufacturing. General Motors predicts that its car subscription services will reach as high as \$25 billion in revenue by 2030,¹⁴ and the car subscription market is set to grow by 71% in the next year by offering customized services. While cars are traditionally known for depreciation almost immediately after purchase, ongoing digital services can provide an opportunity to continuously update vehicles with new software, helping maintain their value over time. In-car services are also creating entirely new revenue streams.

Medical technology is also evolving by leveraging recurring revenue business models. Subscription services can enable healthcare providers to subscribe to hardware and the needed software updates that connect their sophisticated devices, lowering capital expenditures and the need to replace expensive medical equipment as frequently. Direct access to personalized subscription services based on the data from durable medical devices offers another way to improve patient care and experiences.

¹³ Kearney Study, "Riding the wave of subscription business models in manufacturing," 2021. <https://www.kearney.com/industrial-goods-services/article/?a/riding-the-wave-of-subscription-business-models-in-manufacturing>

¹⁴ Rebecca Beltan, "GM aims to build Netflix-sized subscription business by 2023," TechCrunch, October 2021. <https://techcrunch.com/2021/10/06/gm-aims-to-build-netflix-sized-subscription-business-by-2030/>

¹⁵ Bianca Faidutti, "11 Interesting Recent Statistics on the Subscription Business Model," Fusebill, 2021. <https://blog.fusebill.com/interesting-recent-statistics-on-the-subscription-business-model>

¹⁶ "Cloud migration is a must: How to get it right," Accenture, 2020. <https://www.accenture.com/us-en/insights/cloud/migrating-to-cloud>

Manufacturing Recommendation:

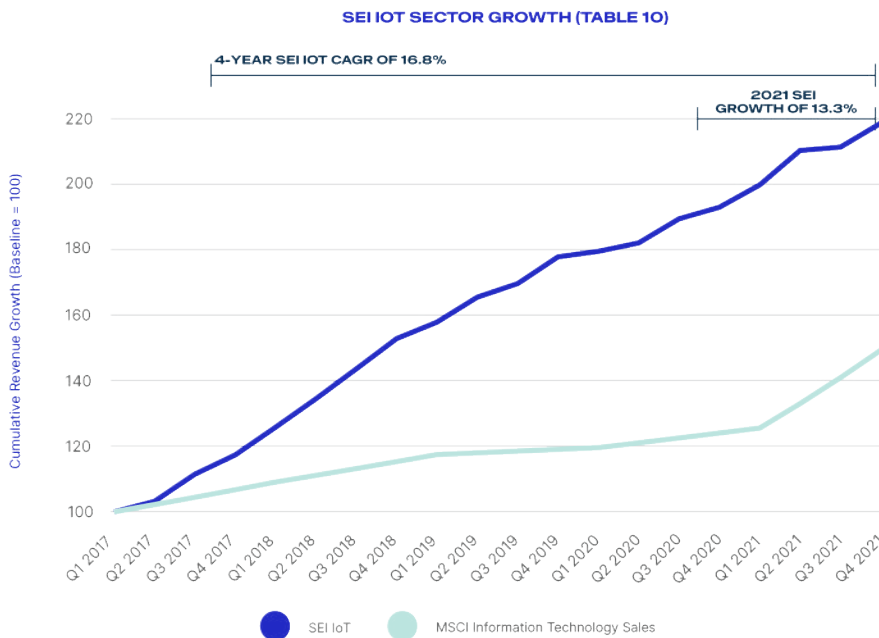
Manufacturing companies should focus on reframing their offerings as long-term and recurring service solutions, testing new models alongside their current offerings. We also recommend they invest even more in cloud technology,¹⁶ focusing on deeper insights to deliver ongoing value with the highest flexibility. Leveraging data-driven insights to enhance service options for maximum revenue impact strengthens the relationship between the manufacturing industry and their customers.

“ We need to move beyond autonomy towards collaborative intelligence ... At the end of the day, we want to sell man-machine partnerships based on differentiated experiences. ”

– Colin Angle, CEO, iRobot¹⁷

Internet of Things (IoT)

The proliferation of innovative IoT devices—connected products with complementary services—has created a need for flexible business models, including subscriptions. A wide array of subscription services are now available for IoT devices and services that track everything from temperature and lighting to intrusions and blood sugar levels. In 2021, IoT companies in the SEI demonstrated revenue growth of 13.3% on average (Table 10).



5G has rapidly become an innovation enabler in the IoT sector, bringing with it the advantages of higher bandwidth, lower latency, and more cost-effective wireless networking. The technology is helping create a massive IoT ecosystem where networks can cost-effectively and efficiently connect billions of devices.¹⁸ By allowing connectivity on a scale never-before imagined, 5G has triggered an IoT rush across a variety of areas previously slow to adopt digital transformation.

¹⁷ Tien Tzuo, “Man-machine partnerships: A conversation with IRobot CEO Colin Angle,” *Subscribed.com*, June 2021. <https://www.subscribed.com/read/news-and-editorial/man-machine-partnerships-a-conversation-with-irobot-ceo-colin-angle>

¹⁸ Thales Group, “5G and IoT in 2021,” *Thalesgroup.com*, 2021. <https://www.thalesgroup.com/en/markets/digital-identity-and-security/iot/resources/innovation-technology/5g-iot>

IoT Recommendation

As seen from the SEI IoT Sector growth, by leveraging trackable data, such as device usage, companies that deploy IoT subscriptions are enabled to craft various service offerings that afford deeper personalization and optimization. And by learning how customers are benefiting from their subscriptions, providers can fine-tune their offerings, improve efficiencies, and grow revenues.

“ Subscription-based products are being fueled by various innovations in cloud computing and mobile connected devices, and are the main reasons behind the spiking interest in Professional Services to move to a subscription model. ”

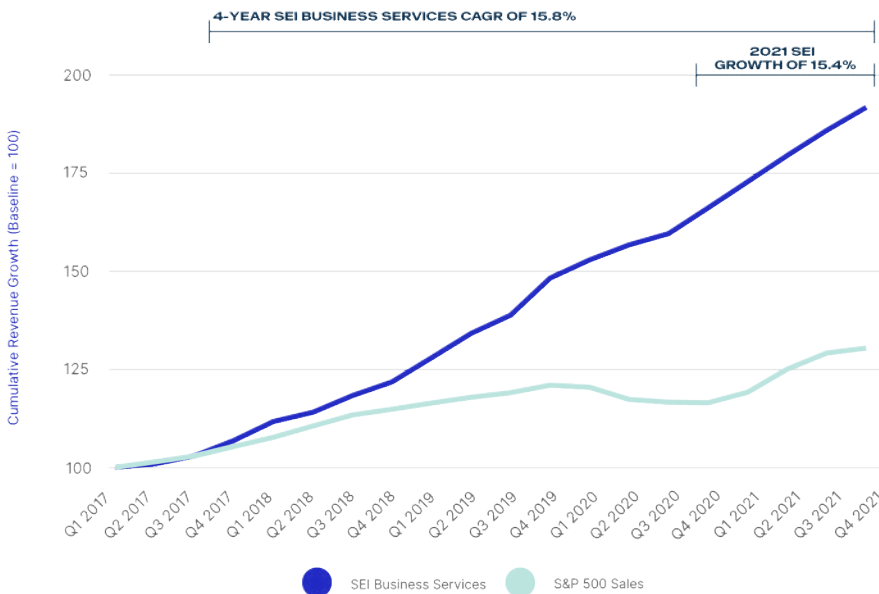
– David Young, Sr. Director, Professional Services, TSIA¹⁹

Business Services

After the Business Services sector (also known as Commercial and Professional Services) slowed in 2020, it’s now recovering toward pre-pandemic rates. Business services providers, such as consultancies, have adapted to deliver value to their customers, such as by providing on-call, always available support.²⁰ In 2021, SEI Business Services companies demonstrated revenue growth of 15.4% on average (Table 11).

15.4%
revenue growth
on average for
SEI Business Services
companies in 2021

SEI BUSINESS SERVICES SECTOR GROWTH (TABLE 11)



¹⁹ David Young, “Moving to a Professional Services Subscription Model,” TSIA, September 2021. <https://www.tsia.com/blog/moving-to-a-professional-services-subscription-model?feed=f785f6c7-01d1-4e42-87c8-26135a6f124d>

²⁰ Peter Bendor-Samuel, Forbes, “Why areas of enterprise services spend will increase in 2022,” December 9, 2021. <https://www.forbes.com/sites/peterbendorsamuel/2021/12/09/why-areas-of-enterprise-services-spend-will-increase-in-2022/?sh=74fbe9082ae8>

Business Services Recommendation:

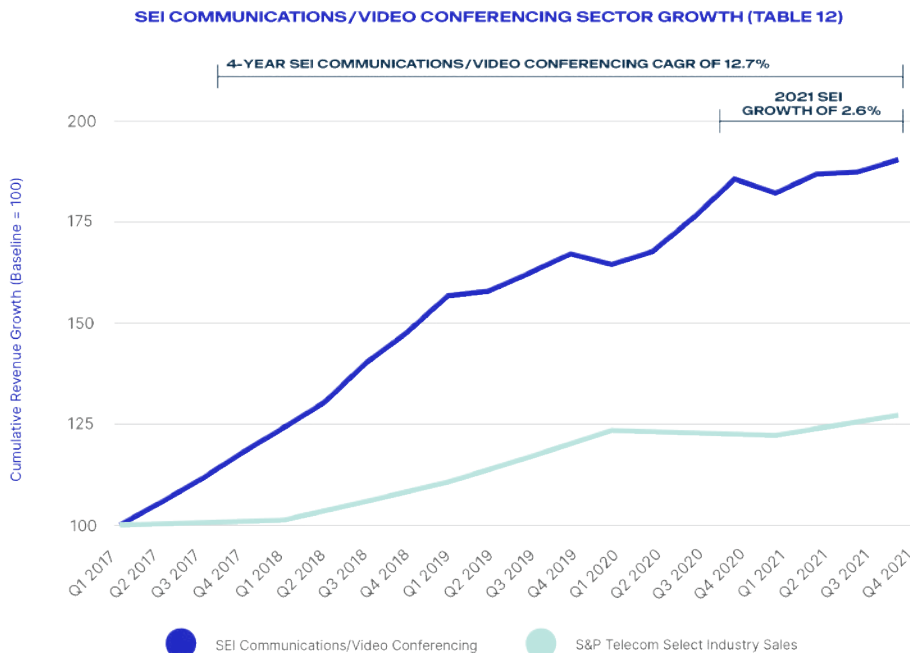
Business services providers should focus on enabling long-term success for their customers. Designing and testing new subscription models, while incorporating flexible payment options, will help these companies adapt their strategy based on what works and doesn't work.

“ The pandemic has completely changed how customers interact with their service providers, transforming the way business is conducted. More interactions are online, and subscribers are more inclined to choose a service provider who offers digital onboarding and self-care services. ”

– Alepo Top Telecom Trends to Watch in 2022²¹

Communications/Video Conferencing

After another year with millions of people continuing remote work, SEI Communications/Video Conferencing companies continued to grow. In 2021, many individuals still faced travel restrictions and were limited in their ability to meet in-person with friends and families. Communications and video conferencing companies enabled people to collaborate with co-workers and remain connected with loved ones. In 2021, these companies in the SEI grew revenue 2.6% on average (Table 12).



²¹ Alepo, "Top Telecom Trends to Watch in 2022," December 2021. <https://www.alepo.com/telecom-trends-2022/>

Communications/ Video Conferencing Recommendation:

As seen by the growth of the SEI Communications/Video Conferencing sector, these companies should continue to leverage their usage, engagement, and bounce data to better understand where in the customer journey there might be an opportunity to upsell, re-market, or offer an augmented service option. It will become even more important to have agile service offerings to quickly adapt to consumer and market demands.

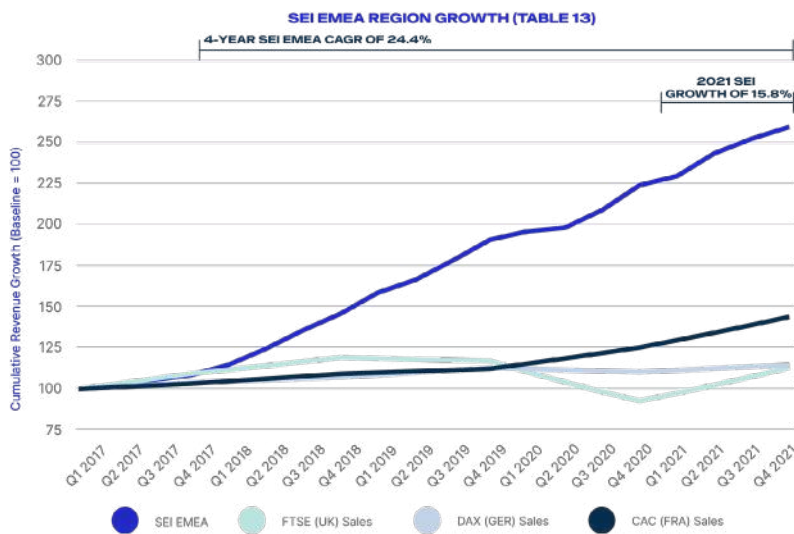


State of SEI by World Region

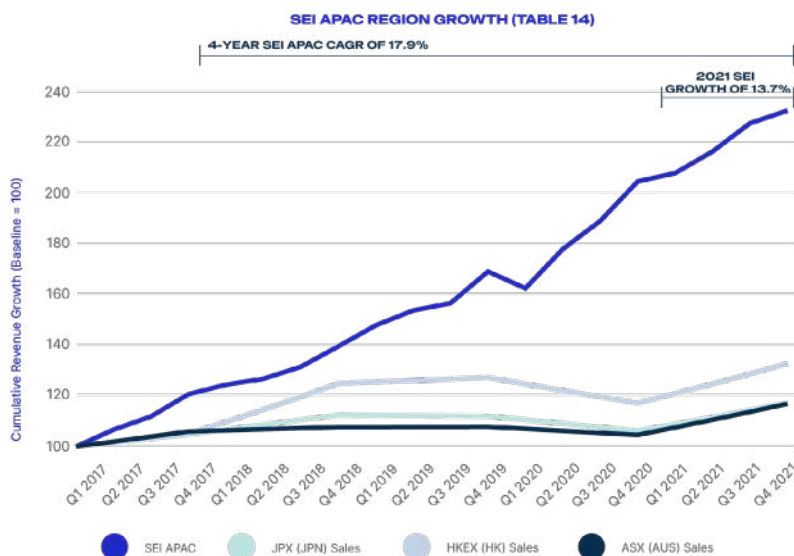
Subscription companies continue to thrive in EMEA and APAC compared to regional stock indices

Echoing 2020 trends, subscription-based businesses across EMEA and APAC experienced faster growth than traditional business models. Revenue for SEI subscription companies in EMEA demonstrated significant growth when compared with the FTSE, CAC, and DAX indices, and revenue growth in APAC showed similar strength against the JPX, HKEX, and ASX indices.

In 2021, SEI businesses in EMEA experienced revenue growth of 15.8% for 2021 and a 4-year CAGR of 24.4% (2018–2021) (Table 13).



Meanwhile, SEI businesses in APAC experienced revenue growth of 13.7% for 2021 and a 4-year CAGR of 17.9% (2018–2021) (Table 14)



Methodology

INTRODUCTION

The Subscription Economy Index™ (SEI) measures the growth in the volume of business for subscription-based products and services. The SEI 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 includes not only the main index, but also 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 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 SUBSCRIPTION ECONOMY INDEX AS A MEASURE OF ORGANIC GROWTH

As will be described in detail below, this index 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 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 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, 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 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 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 (i.e., purchased, implemented, and now uses the product). 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, companies using the Zuora billing service become available for inclusion in the index after two years of being live on the Zuora system.

BURN-IN PERIOD

In order to remove the effect of account migration from other billing systems, a minimum burn-in period of two years is applied to every tenant on the Zuora billing system. That means that the first two years of system activity for a constituent is simply ignored and never used as part of any calculation. The two-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 two years 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 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 acknowledgment 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

The migration of accounts and invoices from another billing system to Zuora usually occurs before or immediately after a tenant goes live on the platform. Occasionally, however, 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 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. A separate tenant is the specific case of multiple entities operating with fully separate product catalogs, 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 or 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' activities are subject to seasonality, although the precise nature of the seasonal effect varies significantly. Using a one-year window for SEI 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 billing business object model](#). One-time charges are excluded from the calculation, as the SEI 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 object model. Note also that any activity a constituent makes that is outside the Zuora system is ignored by the SEI calculation. A consequence of this is in cases where a division of a large corporation uses Zuora for a single product line; 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 has been calculated, the growth calculation for the SEI 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 over any period in time is the average of the growth in activity for constituents who make up the SEI at that time. However, the average growth used is not the simple average (or mean)—rather, it is an amount-weighted (i.e., volume-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 having the largest increases or decreases in activity for each quarter. Outliers are defined as the top and bottom 10% of companies in the SEI. The actual number to remove is rounded up to the nearest whole number; so, for example, if there were 100 constituents in the index, the top and bottom 10 constituents are removed, but if there are 101 in the index, the top and bottom 11 companies would be removed. Removing outliers serves two purposes: first, the movement of the SEI is meant to represent what happens to typical constituents in the SEI. However, averages can be unduly influenced by the presence of very large values. Also, as noted above, the SEI calculation does not contain perfect information about non-organic changes in activity (e.g., conversions, decommissioning of tenants, etc.). Removing outliers helps to ensure that even if such constituents' system activities remain in the SEI and do, in fact, have extreme changes in their activities, 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 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 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 by 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. 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 (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. This 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 (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, as described above. The number of constituents to remove for the top and bottom 10 percent outlier removal 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 or one of its sub-indices according to these rules is twenty four, however, the SEI increases this minimum to twenty five for simplicity.

INDEX DETAIL

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 FACTOR: CHURN

The SEI measures the amount of growth in the Subscription Economy, but a single indicator does not give all insight into what may be driving it. A related factor, churn (the loss or churn of existing accounts), helps explain potential sources of that growth. Churn is 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 in Q3 (up to one year and one quarter after the last activity.)

Data on churns is presented and communicated in this report as a rate, and 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 (this can also be viewed on an annual time frame and basis, as this report includes). This metric is a growth factor of the SEI. Like the percentage change in activity used in the SEI calculation, churn is an average of percentage changes in other activity-based measurements. Unlike the SEI, churn is not used to update the index—it is simply provided as explanatory information for quarters and/or years.

Companies calculate churn of accounts in many different ways. The SEI's churn metric uses a simple calculation that makes results comparable across the wide variety of companies in the SEI, and is consistent with the calculation of the SEI's main index.

Many companies use different definitions for metrics, such as when defining churn, 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. This SEI definition was chosen to remove the effects of seasonality and for consistency with the annual activity calculations used by the SEI.

ADDITIONAL METRIC: COMPOUND ANNUAL GROWTH RATE

Within this report, compound annual growth rate, or CAGR, is the mean annual growth rate of an index over a specified period of time longer than one year. This is calculated by dividing the ending value by the beginning value over the time period, raised to an exponent of one divided by the number of years between the beginning and ending values, subtracted by one, then multiplied by 100. That is,

$$CAGR = \left(\frac{EV}{BV} \right)^{\frac{1}{n}} - 1 \times 100$$

Where EV is the ending value of the time period, BV is the beginning value of the time period, and n is the length of the time period by number of years.

CAGR represents one of the most accurate ways to calculate and determine returns for various types of assets, investments, and indices that can rise or fall in value over time. Additionally, when interpreting compound annual growth rates, it is important to remember that CAGR does not reflect investment risk and the same time periods should be used to effectively compare multiple CAGRs to one another.

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's method is also applied to specific subsets of the constituents. 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. The only requirement for creating an SEI sub-index is that the category must have a minimum number of twenty-five constituents, as described above.

A variety of classifications are used to define sub-indices, and examples include the Business Model, Sector, Industry, Vertical, and Geographic Region. Additional classifications, or combinations of classifications, may be applied in the future. These classifications are provided by data providers and applied to the billings system measurements via Zuora's CRM system. Note that the IoT sector is determined by an internal categorization method based on additional Zuora tenant characteristics because many commercial data vendors do not yet recognize IoT as a separate category.

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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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Zuora's Subscribed Institute is a dedicated think tank focused on the Subscription Economy. The Institute supports its 1500+ business executives across 600+ global companies with critical research, ideas, events, and connections. Research provided by the Institute helps business leaders and their organizations maximize the opportunities of the Subscription Economy.

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