SUMATOSOFT Building SaaS Platforms Trends, Challenges, Our Expertise **Building SaaS Platforms - Trends, Challenges, Our Expertise Contents** 1. Overview 3 2. General Facts about SaaS What is SaaS? What are SaaS benefits for businesses? What are examples of SaaS? SaaS development process Trends in SaaS development 6 Top SaaS trends SaaS development challenges 3. SaaS development at SumatoSoft 10 Overview 11 13 The technological stack we use and why 15 Discovery phase. Details The way we develop apps - we chase quality 16 In conclusion SUMATOSOFT sumatosoft.com 1. Overview The whitepaper you are looking at contains information on how SumatoSoft develops Software-as-a-Service (SaaS) applications. We strongly encourage you to read this guide if you are going to collaborate with SumatoSoft in SaaS development or if you have doubts about whether you should develop a SaaS app or not. The document contains the most major issues on two topics: • General facts about SaaS. If you are familiar with general info about SaaS, we encourage you to read the last two paragraphs about SaaS trends and the challenges you will face as a SaaS owner. Other issues in that chapter are general and include SaaS definition, benefits, examples of SaaS apps, the whole process of SaaS development. SaaS development at SumatoSoft. What time frames, cost, used technologies, insights are and the ways we chase quality. If you are serious about developing a SaaS application, putting in your time at reading this article becomes a very profitable investment. Enjoy reading! SUMATOSOFT 2. General Facts about SaaS What are examples of SaaS? What is SaaS? The SaaS (Software as a Service) model allows users Google Apps to use the software online on a monthly/annual Salesforce subscription basis, without desktop installation, Dropbox Zoom further maintenance, or integration issues. SaaS provides customers with ready-made software MailChimp Slack through a web browser or mobile application. Amazon Web Services What are SaaS benefits for businesses? • Scalability - SaaS platforms are easily able to scale Protection from piracy - Cloud-based apps are less on demand. susceptible to software piracy. • Financial benefits - SaaS is cloud-based technology, Access to the international markets - If you are which means you get all financial benefits of using ambitious and have a great idea, SaaS apps can give cloud servers such as zero cost of maintenance. access to the international markets. lower energy cost, predictable monthly payments for software licensing. SUMATOSOFT sumatosoft.com

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The architecture design and programming stage

is all about the development of the app.

we go to the programming stage, which

is the coding itself.

tests, and so on.

Finances Online

Share & Data Analysis

70 SaaS Statistics You Must Learn: 2020/2021 Market

A median annual church rate for SaaS businesses

 In 2019, SaaS companies generated \$100 billion in revenue and accounted for 25% of the enterprise

• For 2018-2019 SaaS account for **82% of enterprise**

• In the first quarter of 2020 (when Coronovirus forced many people to switch to remote work), SaaS communication

platforms experienced triple growth in daily active users.

3. Other global differences are invoice

There are 10 well-known payment methods worldwide,

However, there are a huge number of local unknown

payment systems in different countries. Since incoming

Another issue is the **billing methods**: you can either ask

developers to write a custom billing software or integrate

international invoicing (an example: QuickBooks). If you

can't manage global invoicing and payments, part of the

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Yury Shamrei

CEO, Sumatosoft

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Social Networks

Ecommerce

Marketing

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We build real-time high transaction throughput

that say more than words:

tracked products.

IoT

Enterprise

Real estate

Some cases of how we make choices:

a. An app is supposed to deal with streaming and broadcasting with a large number of users watching at the same time. We use

Node.js, which is based on Java and supports a large number of

b. An app needed machine learning and working with Microsoft

office docks, we go Python. Python offers a large number of

c. Building a SaaS application we often use Ruby on Rails. This framework is good when an app is likely to evolve during

development and the requirements are not clearly defined. Ruby on Rails is a very flexible framework in terms of adapting to new requirements. Ruby on Rails performs well under load,

but in the case of large-scale data processing, it might require

enterprise-level application. From the outset, the project was with clearly defined requirements, described entities and

AWS is a **broad infrastructure hosting**. AWS provides storage

for app files, media files, efficient storage with security

Out of the box, you can get a functionality (service) that

with the most advanced security capabilities via a CDN.

Discovery phase. Details

At that stage, we thoroughly examine and analyze the details of our client's idea and business to offer a most relevant, optimal, and value-creating solution that meets the client's

To ensure that the requirements meet the client's needs we make a set of documents. One of them is a Definition of Ready checklist (DOR checklist). It is a Scrum artifact that enlists all the points that a new feature should follow to be deemed as ready for development. Every feature is validated through a DOR checklist and requires a client's approval to make sure

that the feature corresponds to the project needs.

There are at least 4 more essential for the development

We made a whitepaper about the Discovery phase.

process documents that we create during the Discovery phase.

event logs.

requirements.

It is free to read.

DigitalOcean, Microsoft Azure, and dedicated server hosting IBM.

features for archiving and backing up data, and service for

real-time big data processing such as social media feeds and

allows the user to store, upload, retrieve large files up to 5 TB

from the cloud, perform complex calculations, or deliver data

d. There is an app that is supposed to become **a huge**

dependencies between them. We choose Java.

parallel connections right out of the box.

some additional tweaking.

libraries that help to meet both requirements.

systems. We have some examples of systems we built

amounts of data in real-time (website pages, XML, CSV, TXT

b. IoT service for collecting data from multiple devices,

devices, which sent data packages every second.

a. an application for collecting information about companies from

all over the world. The purpose of the system was to process large

documents) and extract information related to specific companies. The database contains information about over 2 billion companies.

processing it, and then presenting it in a form of real-time charts for users. The system collected information from dozens of

c. Price tracking tool, which allows users to follow products on e-commerce websites and obtain the latest information about price changes. The tracking mechanism processed

over 10 million products daily and records price history for

money from customers is a crucial point for successful

business growth, you should pay attention to that.

your app through API with existing software for

audience may refuse to use the application.

such as Visa, MasterCard, PayPal, Google Pay, Apple Pay,

sequencing and payments.

American Express cards, and more.

that make 10\$ million annually is 20%.

software market.

software IPOs.

Architectural programming can be defined

as "the research and decision-making process

designed". When the scope of work is defined,

that helps to identify the scope of work to be

Testing and QA are about different types of

testing and bug checking. The phase includes

code reviews, unit tests, performance testing, load testing, security testing, HIPAA/HITECH & GDPR

Once again, the Discovery phase is the most vital

part of any software project. In the paragraph

about SumatoSoft, you can find information

on how we hold the Discovery phase.

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The advance of technology is based

on making it fit in so that you don't

really even notice it, so it's part of

That quote is not about cloud technologies, but it reflects

The discovery (or scoping phase) is about collecting and analyzing information about your project and its intended market. The Discovery phase is the most vital part of any software development project. In that phase, we create a vision of the future solution and write down business and functional project requirements. Requirements are the core of any software project. IA and UI/UX Design (Information Architecture and User Interface/User Experience Design) phase is about several things: Organizing, structuring, and labeling content so users can find the information they are looking for or fulfill the task they have. Thus, we define what information users get on every page.

Building a user interface, its control elements (like buttons,

voice control elements, gestures support), and drawing

the design. Thus, we define the ways users can interact

everyday life."

what we see today in the SaaS industry.

Bill Gates

Software-as-a-Service. Could 2020-2030 be the

Trends in SaaS development

There are 2 pieces of research on the SaaS industry that describe current trends and make predictions about the future of the SaaS market. We show the most insightful numbers that will be interesting for investors, businesses, developers, and the average SaaS user. You can find references on research at the end of this paragraph.

with an app and we determine the look and feel

Trends in SaaS development

SaaS development process

of any web or mobile application.

The process consists of 4 stages:

of the app.

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The development process for SaaS applications doesn't differ significantly from the standard development process

Researches we used:

ARK Invest

Golden Age?

S SUMATOSOFT

 It's expected that revenue generated by SaaS companies will reach 780\$ billion by 2030. • Top Enterprise SaaS vendors experience **25% - 45%** annual growth. • From 2009 to 2019, venture capital increased its annual investment in software by more than six-fold from \$7 billion to \$44 billion.

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Top SaaS trends

CAGR will show 21% until 2030.

Cloud infrastructure is almost 3 times cheaper

SaaS development challenges

app collects and processes personal information. Besides, the regional legislation can seriously affect the available functionality in the region and even prohibit using a SaaS

Furthermore, you face various price points and customer acquisition models in different geographies. So, building a

SaaS system you have to analyze all these factors for

The main thing you need to know - there is no standardized system across the board. Online

place where a buyer resides.

or operating.

businesses have to deal with all local tax rules, and tax

rates may vary depending on the service you sell and the

An example of a methodology that lets to pay VAT in the

UK and EU is a VAT MOSS (VAT Mini One Stop Shop). This

scheme requires you to charge tax where the customer is

based, as opposed to where a company is headquartered

Sales tax for SaaS companies became such a pain in

recent years, that an independent company that serves

 SaaS app cost starts at \$30-\$40k for an MVP. The cost of a complex full-fledged app starts from \$100-250k depending on the service functions and other factors.

 SaaS MVP may be planned, designed, developed, and released within 5-6 months. The development of a full-fledged app takes up to 12 months to release the

 The most time-consuming stage for a client (you) is the Discovery phase. At this stage, we help to analyze and define your SaaS application's value proposition and the

are likely to arise, and previous requirements may change.

The client should always be in touch with the development team. That is the only way to meet your expectations 100%.

The longest stages are the Development stage and

The most expensive stage is Programming.

Testing (or QA).

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Overview

Healthcare

CMS

Logistics

The technological stack

app development doesn't exist.

1. The best technological state for SaaS

It all varies depending on the desired functionality, the

domain of an application, throughput. The choice of a programming language is based on the requirements for

the app, budget, time frames, and the number of

2. Technologies for the back-end.

We use top tech stack for back-end development

has become a certificated partner of Amazon. Today we

AWS offers a wide range of services for various needs, is

well-documented, and has a bunch of articles about best

hosting provider that provides 100% of server uptimes.

practices that are easily available. Amazon is a very reliable

The right choice of web hosting is one of the key elements

Alternatives we use

can assure you that AWS is suitable for most types of

such as Ruby on Rails, Python, Node.js, Java.

functions that need to be programmed.

we use and why

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AdTech

Media &

entertainment

Food Tech

Blockchain

E-learning

Banking &

finance

SaaS businesses and solves a sales tax problem appeared.

than on-premise infrastructure.

1. The market of SaaS products is international. The main benefit of SaaS technologies for users is that they need only a stable Internet connection to use SaaS applications. Thus customers from all over the world may become one big global market for your SaaS application. There are 195 countries, most of them exist with their own currencies, time zones, languages, date, number format, and legislation. The latter especially affects the ways an

every county where your SaaS app will work - it is a high volume of work that you have to tackle. SUMATOSOFT SaaS development challenges 2. Global business - global sales taxes.

system.

There is also a special software that solves a tax challenge that is called <u>Stripe</u>. According to the <u>research</u> from Stripe, two-thirds of its clients said the challenge of implementing sales tax limited their growth. One of the key global tax territories is the United States, which has different tax jurisdictions in specific states, counties, and cities. SUMATOSOFT 3. SaaS development at **SumatoSoft**

Overview

first version.

list of functions the software must offer. The Discovery phase lasts up to 3 months, and it requires full client **involvement** during the whole period. SUMATOSOFT Overview There are 3 engagement models, depending on the way a client pays for our services: time & materials (the billing is based on actual time invested into the development), fixed price (the budget is defined and fixed), dedicated team (specialists are paid for full-time work). More info about engagement models you can find here. • The client (you) is always involved in the development process. During the development process, new requirements

We have experience in building SaaS systems for various domains. You can look through our published case studies on our website. Below you can find the list of domains we have worked with:

3. The main front-end technology is JavaScript. It is the best language to create interactive and attractive interfaces. We mainly use javascript-based libraries and frameworks (ReactJS, VueJS, AngularJS). SUMATOSOFT The technological stack we use and why 4. Among web hosting services SumatoSoft has used AWS since 2014. SumatoSoft has worked with AWS services for years and

applications.

for SaaS app success.

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Quality is more important than quantity. One home run is much better than two doubles." Steve Jobs 1. We work according to software development standards compliance. The development process goes in accordance with chosen compliance. There are third-party organizations

The way we develop apps - we chase quality

that check upon request whether the compliance guidelines were met during the development. **Examples**: OpenADR, Energy Star. SUMATOSOFT The way we develop apps - we chase quality 3. We track errors and monitor performance. Using service-oriented architecture allows us to monitor application components independently, in the way that all logs and metrics are separated for each service. We use various tools for logging and monitoring: New Relic, Zabbix, Errbit, Rollbar. For AWS we use Amazon CloudWatch for collecting logs from used AWS services and EC2 instances together with AWS metrics and monitoring tools. Also, we suggest our clients use <u>Datadog</u> as a monitoring & analytics tool.

4. We guarantee trustworthy development processes. For each project that we undertake we assign a dedicated Project Manager on our side, that is responsible for project delivery, meeting project milestones (deadlines) and budget, progress tracking and reporting, and the correspondence of the project deliverables to the of its tools. SUMATOSOFT

Thanks for your attention!

highest quality standards. To ensure this, we use Jira and a full variety

Stay tuned for the incoming new materials!

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SaaS apps most often deal with clients' sensitive data that is expected to stay safe. For this reason, we make sure that our applications use CORS, CSP and are protected against the most popular attacks, e.g. CSRF, XSS, SQL injections, DDoS attacks. Our QA team always tests applications against **OWASP's** The Ten Most Critical Web Application Security Risks. We use different tools for security testing like OWASP ZAP, SQLMap, manual and automation testing, etc. sumatosoft.com

If you have any questions or you have an issue we did

In conclusion We hope that was helpful. Our mission is to become a reliable **long-term technical partner** for you that is why we share **meaningful information** based on our experience and expertise. not cover, feel free to email us at:

sumatosoft.com

2. We ensure privacy and security.