

SOFTWARE AS A SERVICE (SAAS) AT TATA CONSULTANCY SERVICES

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ABSTRACT

Software-as-a-service (SaaS) is one of three principal components of cloud computing, with the other two being platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS). SaaS runs on top of PaaS that in turn runs on top of IaaS. SaaS has not only its business model but also its unique development processes and computing infrastructure. At the system level, unlike traditional software that runs on operation systems, SaaS is usually deployed on a PaaS system such as Corresponding author Google App Engine. <http://code.google.com/appengine/>. Amazon Elastic Compute Cloud.

Keywords: Software As A Service

1. INTRODUCTION

Software-as-a-service (SaaS) is one of three principal components of cloud computing, with the other two being platform-as-a-service (PaaS) and infrastructure-as-a-service (IaaS). SaaS runs on top of PaaS that in turn runs on top of IaaS. SaaS has not only its business model but also its unique development processes and computing infrastructure. At the system level, unlike traditional software that runs on operation systems, SaaS is usually deployed on a PaaS system such as Corresponding author Google App Engine. <http://code.google.com/appengine/>. Amazon Elastic Compute Cloud.

specialized SaaS infrastructure. To manage the software data, conventional systems often use relational databases that support concurrent processing and give readers priority over writers. Data schemas are usually normalized. Conversely, a PaaS system often has a large amount of data with big data solutions, such as NoSQL databases and MapReduce-style parallel processing. A PaaS system may favour writers over readers, de-normalize data schema and adopt weaker consistency requirements such as eventual consistency. Conventional systems do of PaaS is that it supports all tenant applications with one code base. For reliability, availability, and security, conventional systems use security kernels and redundancy and rollback mechanisms while PaaS leverages built-in testing, continuous validation, and automated triplicate writing and recovery as major techniques. A PaaS infrastructure often has built-in fault-tolerant facilities and supports scalable computing. SaaS is a new software delivery model. While SaaS can be constructed in a service-oriented manner, SaaS and service-oriented software are different. Today's SaaS is rather distinct from service-oriented computing (SOC). emphasizes a composable architecture with which to integrate heterogeneous software systems. Hence, a service-oriented infrastructure is often composed of a stack of standard protocols for publishing services, and for orchestrating or choreographing services dynamically. SaaS emphasizes a customizable architecture of a massive scalable system built upon a cloud infrastructure. Hence, it is enabled by database and PaaS design techniques to support customization and scalability at various levels including the user interface, workflow and persistence. While a SaaS service can be specified using service-oriented standards such as WSDL or OWL-S, current SaaS services focus on execution and utility services that users can use in their applications. Compared with SOC, SaaS has unique features of customization, persistency, and scalability, following multi-tenancy architecture (MTA). MTA is a key feature of SaaS.

2. REVIEW OF LITERATURE

Title: Software as a Service Value and Firm Performance - A literature Review Synthesis in Small and Medium Enterprises

Author: Jorge Carrola Rodrigues

Source: International Research Journal of Engineering and Technology (IRJET)

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It is consensual that Software as a Service (SaaS) has significant effects on enterprise costs and return on investment (ROI) in information technologies (IT) and information systems (IS). However, as a distribution model which is still

relatively recent and a fraction of all IT invested, even if growing at a faster pace than traditional distribution models, the impact in Firm Performance is still an area of research which is very much under covered especially in the small and medium enterprises (SMEs) segment. Literature reviews to support research of SaaS applications impact in SMEs Firm Performance are unknown to the best of our knowledge and this review in selected publications is a starting point to fill this gap and looks at some of the cross-road subjects that might be combined to build on greater knowledge and research work on the subject, such as Firm Performance influenced by (not specified genre of) IT/IS adoption; Cloud Computing and Performance, and, Enterprise Systems Software and Firm Performance. It provides an updated bibliography of the most relevant publications about these subjects, published mainly during the period of 2001 to 2014, for the exception of a seminal article published in 1995. A total of 32 articles from 30 journals and 2 conferences are reviewed.

ARTICLE: 2

Title: Software as a Service Value and Firm Performance

Source: International Journal for Quality Research

Author: , Pedro Ruivo, Tiago Oliveira

Abstract:

In early days of commercial software development, it was very expensive as multiple components were required such as - hardware, software, infrastructure to support mere an application development and implementation. Industry was using it with a note of burden to manage the support services. Visualizing these specific problems ICT took it as a challenge and introduces cost effective solution and bifurcated in Service components. Broadly a) Infrastructure as a Service b) Platform as a Service c) Software as a Service. Industry welcomed the approach and started handing over these services to market players and were able to focus on their key business areas. In recent development of cloud architecture these are becoming BUZZ word in industry and innovating traditional approaches. Keywords: IaaS, PaaS, SaaS, CaaS, Security, Multitenancy, Cloud Architecture

ARTICLE: 3

Title: Procedural Ailment Detection System - A web based healthcare approach

Author: Ashu Krishna

Source: Journal of Emerging Technologies and Innovative Research

Abstract

Healthcare has evolved at a rapid pace, and with its evolution has arrived the need for an Information Technology system able to serve the basic purposes while evolving with the times. Procedural

Ailment Detection System is a Software as a Service (SaaS) approach to simplifying the fundamental problems associated with digitization of healthcare to the masses. It is a system implementing a variety of web services and resources to enable a technological medium which allows for end users to identify ailments, connect with hospitals, find basic medical advice and gain a medical forum. This system is better than the other services on offer because it utilizes a data mining approach with respect to the datasets it has at the beginning and gains over time, which when mapped to the interactive UI, essentially allows for a more efficient system with a far higher cognitive ability.

RESEARCH GAP:

At the same time they can help focus your business' staff into a unifying mission. A single objective for everyone will help maintain cohesion in a team and create better consistency when dealing with customers. Goals can also help with motivating you and your team in growing the business or making it more effective

OBJECTIVES:

- Specific – Goals have to be highly specific for people to know what they are about
- Measurable – If you want to be successful you need a way to measure the results.
- Attainable – Your goal has to be achievable for you and your staff.
- Relevant – Most businesses forget this one. Relevant is ensuring that your goal.
- Timely – You need to set a time period for the goal to be achieved.

3. RESEARCH METHODOLOGY

Need For The Study

Origin of SaaS business model 1.1. Evolution In order to find out where the Software as a Service originates from, we had to dig very deeply in the chronicles of the computer science. We went back in time till 1961, when John

McCarthy¹ postulated during a speech at Massachusetts Institute of Technology, for the first time the idea of utility computing. The idea was based on the commoditization of the electrical grid in order to distribute the services publicly in a more efficient and cost effective way. The parallel was made for the computer time-sharing technology where computing power or even specific applications are provided as a service through the platform, invoicing the customer. Despite the popularity of the forwarded idea, the concept did not get the opportunity to prosper, because the required enabling technologies were scarcely out of the egg. FIGURE 1: HISTORICAL EVOLUTION OF SAAS i Thereupon, in late 1990's the development of computer technologies reached the appropriate levels of commercialization, giving the revival to the McCarthy's idea in the form of application service providers and cloud computing. Finally, in the beginning of the 21st century, Software as a Service was officially introduced by the Software and Information Industry Association (SIIA).

Scope Of The Study:

- ❖ The study mainly focuses on Saas its history and latest
- ❖ Developments in the country in the projects market.
- ❖ The study also keeps a birds eye view on global services market models and its development
- ❖ The study vastly covered the aspects of IAAS , PAAS, SAAS , clearing and settlement mechanisms in exchanges. The study also provides regulatory framework for commodities market in India

RESEARCH DESIGN

A research design is purely and simply the framework or plan for a study that guides the collection and analysis of data.

The research was taken in view of latest information and technology using in a stock market or securities companies.

DATA SOURCES

Primary Data are those which are collected for the first time for a certain investigation. These are original and essential raw data. No doubt the information has been collected as per company's holistic development of investors used in securities market controlling their risk. In the study, the primary data and secondary data collection methods are used.

DATA SOURCES

Secondary data was obtained from journals, magazines, newspapers, books and of course the Internet.

RESEARCH INSTRUMENT

For doing the survey research, **structured questionnaire** with both open-ended and closed-ended questions was used.

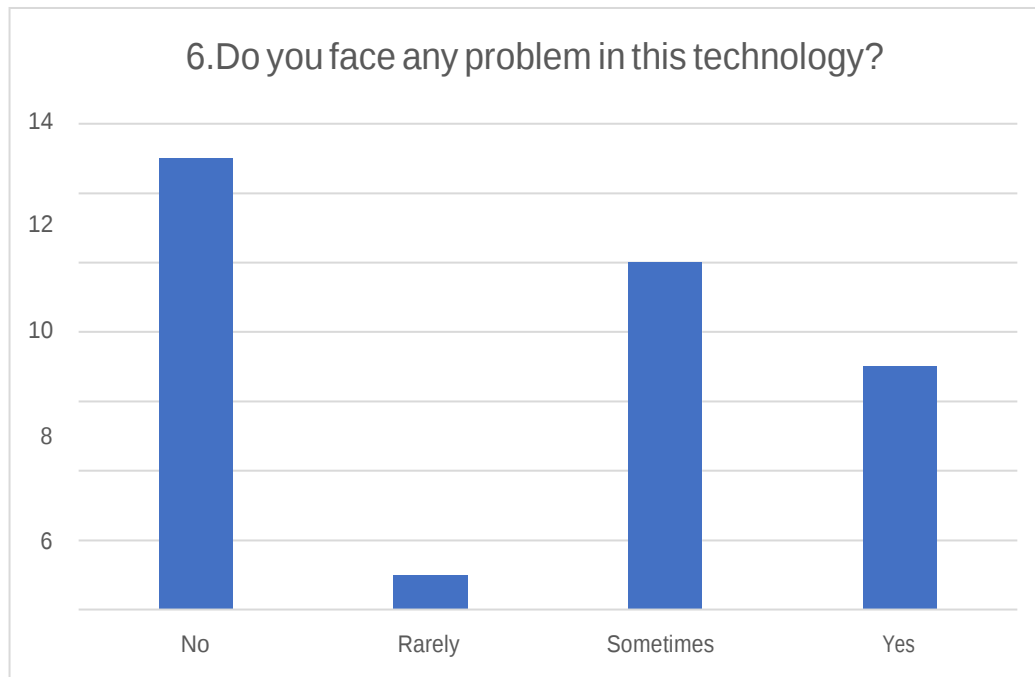
PLACE OF STUDY

Tech Mahindra, Sector-58, Hyderabad

4. DATA ANALYSIS & INTERPRETATION

1. Do you face any problem in this technology?

Instance	No. of Members	% of 100-
Yes	7	22.6
No	13	41.9
Sometimes	10	32.3
Rarely	1	3.2

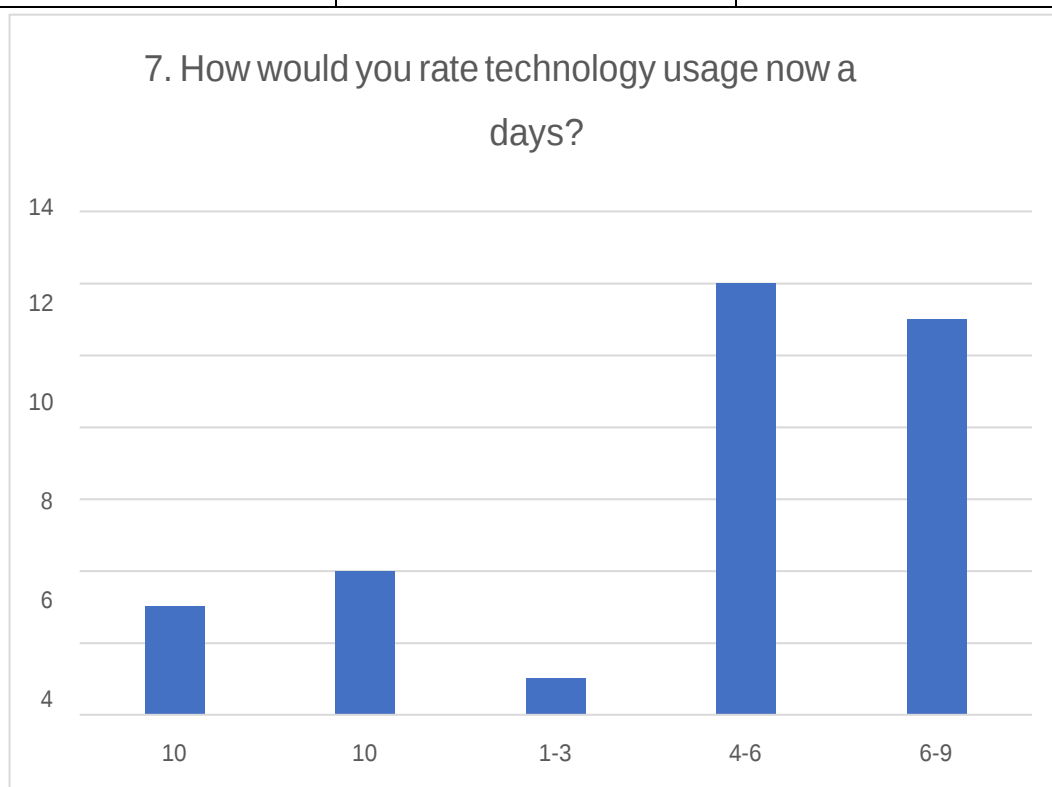


INTERPRETATION:

Total Out of 31 people 13 members are not facing any 10 members are sometimes and 7 people answered Yes it give problem sometime and last 1 person give Rarely.

2. How would you rate technology usage now a days?

Instance	No. of Members	% of 100-
1-3	2	6.4
4-6	13	38.7
7-9	13	32.3
10	3	22.6

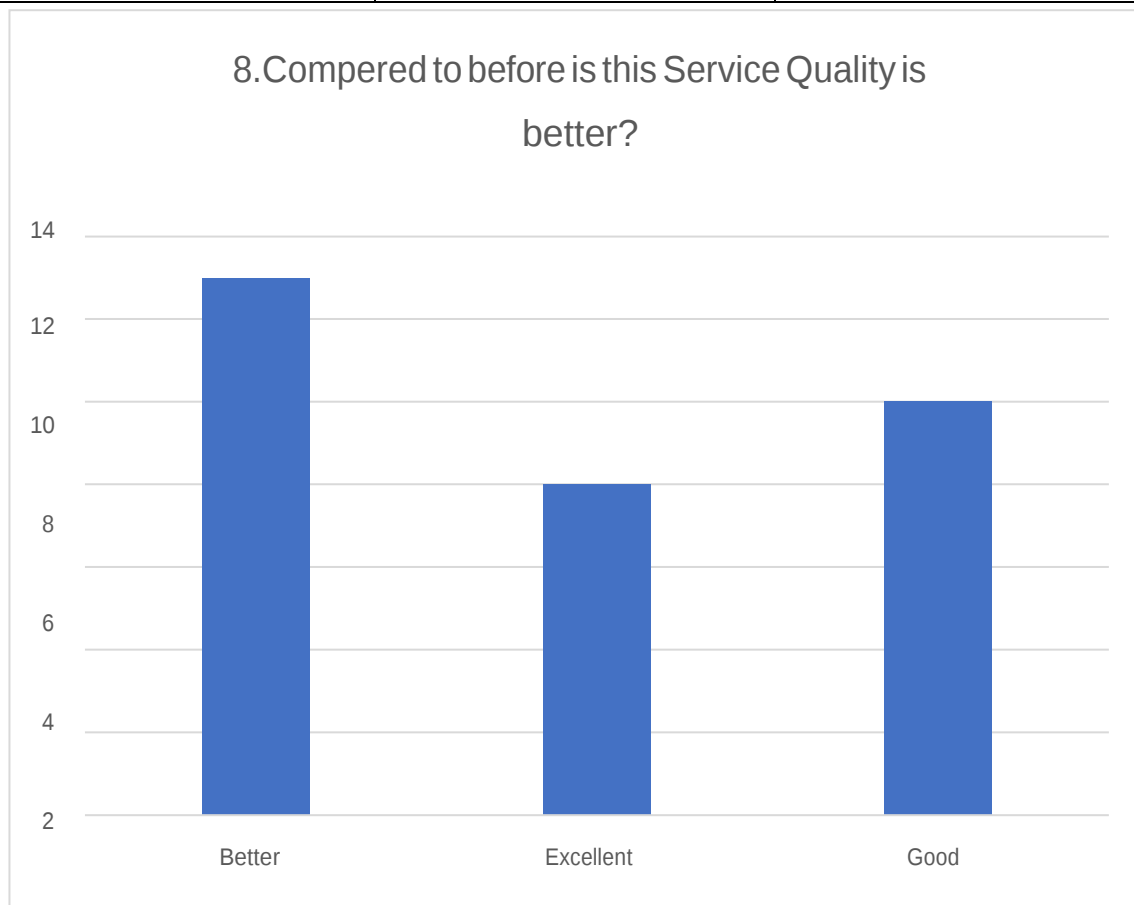


INTERPRETATION:

Total Out of 31 people 31 members of my survey given rating is 4-6 and 13 are given rating is 7-9 and 3 people are given like 10 they are satisfied of this technology.

3. Compered to before is this Service Quality is better?

Instance	No. of Members	% of 100-
Good	10	32.3
Better	13	41.9
Excellent	8	21.8
None	-	-

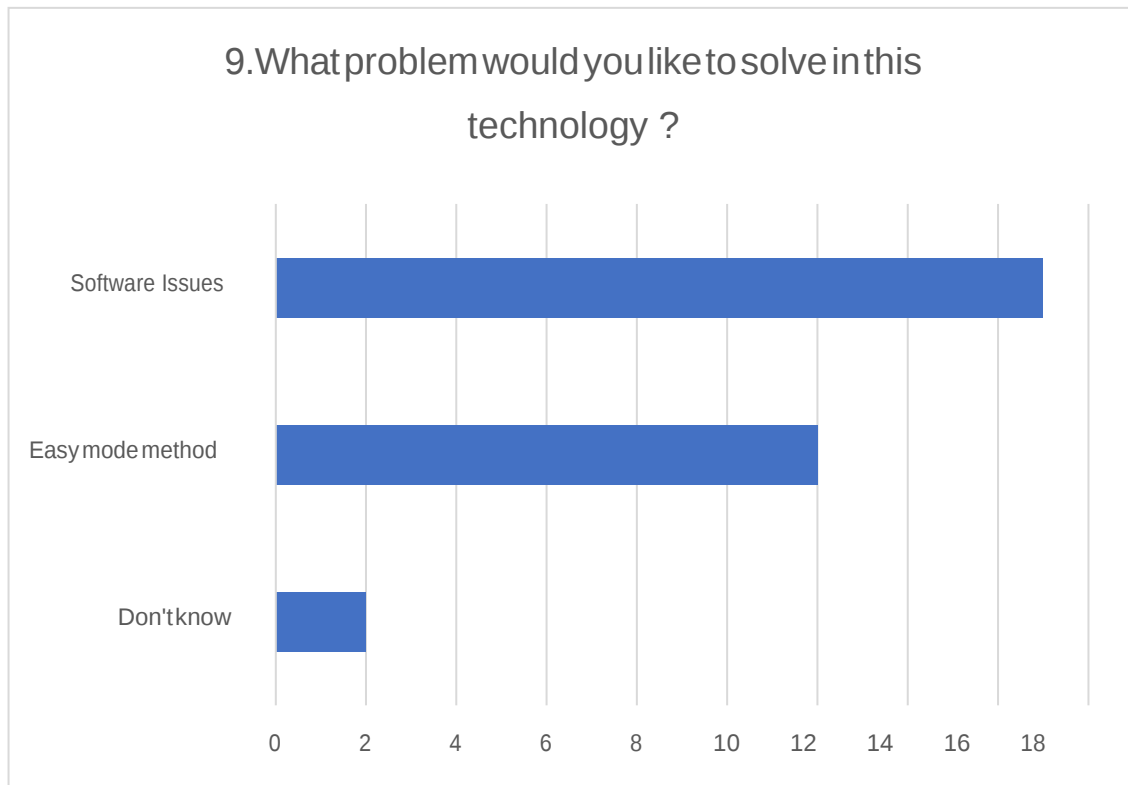


INTERPRETATION:

Total Out of 31 people 13 members of my survey are given Better service Quality compering before and 10 are good and are Excellent of using the technology of Saas.

4. What problem would you like to solve in this technology?

Instance	No. of Members	% of 100-
Software's Issues	17	54.8
Easy Mode Method	12	38.7
Don't Know	2	6.5

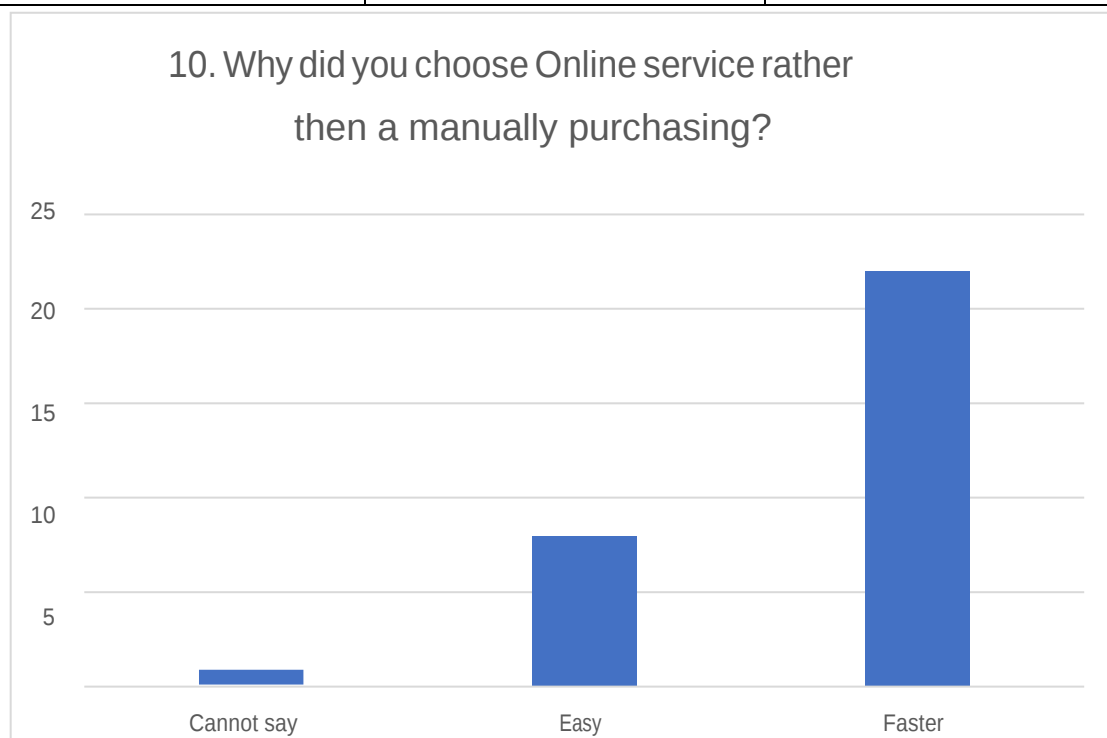


INTERPRETATION:

Total Out of 31 people 17 members of my survey they wanted to solve the problem of Software's Issue 12 members are want solve like Easy mode methods and rest of them are not aware in this technology.

5. Why did you choose Online service rather than a manually purchasing?

Instance	No. of Members	% of 100-
Easy	8	25.8
Faster	22	71
Cannot Say	1	3.2



INTERPRETATION:

Total Out of 31 people 26 members of my survey responded as Faster is importance given and 8 people are easy of usage and rest of them unable to say may they are aware of it.

5. CONCLUSION

Through thorough analysis of SaaS Business Model presented in this master dissertation, we can clearly conclude that SaaS is not a fairy tale with the happy end for everyone. This Business Model has its specific advantages and disadvantages, depending on the role in the SaaS ecosystem, which influences the decision to offer and to implement the services based on SaaS business model. It is likeable to foster the SaaS business model from the customer point of view because of the following factors. The first and the determinant issue is the question whether the considered application makes a part of the company's core activity.

If this is not the case, the application can be outsourced and consumed as a service; resulting in the cost savings for the customer, thanks to the substitution of capital expenditures by the operational expenditures through extensive outsourcing of the IT infrastructure and other costs, associated with the installation, exploitation and maintenance of the on-premise software. Secondly, the total cost of ownership for SaaS compared to the on-premise software is much lower for the Small and Medium sized Enterprises, what results in a higher adoption rate of SaaS by companies with limited number of users. Because of the pay-per-use the customer avoids the overcapacity and over budgeting.

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