

**Volume 1, March 2023**

Proceedings of the 1<sup>st</sup> International Conference on Management  
and Small Medium Enterprise (ICMSME-2023)

**Comparison Analysis of Information Technology Service Management  
Software**

**Reisa Permatasari<sup>1\*</sup>, Doddy Ridwandono<sup>2</sup>, Mohamad Irwan Afandi<sup>3</sup>, Moh. Rifqi  
Zamzami<sup>4</sup>, Fiqi Akbar Trinanda<sup>5</sup>, Aris Heryanda Wibowo<sup>6</sup>**

<sup>1,2,3,4,5,6</sup> Information System, UPN Veteran Jawa Timur, Indonesia

\* Corresponding author e-mail: reisa.permatasari.sifo@upnjatim.ac.id

**A B S T R A C T**

*UPT-TIK UPN "Veteran" East Java is one of the technical service units at the university level which has functioned as a service in the field of Information and Communication Technology. It can be said that every organization needs the right information technology, which is useful for helping needs and solving problems that exist in the organization. If IT management in an organization is running well, many benefits can be obtained. Therefore we need software to manage IT services so that they can run optimally. Examples include ITSM (Information Technology Service Management) software which can assist an organization or company in maximizing IT services. There are budget and time limitations in implementing ITSM software at UPT-TIK UPN "Veteran" East Java, making all decisions made regarding purchasing or subscribing to the software must be effective and efficient. Therefore a comparison was made of several ITSM vendors using the independent study method based on the internal needs of the East Java "Veteran" UPT-TIK UPT-TIK team. Meanwhile, after the initial search, several ITSM vendors were found that were worthy of comparison and possible to implement, namely Fresh Service, Zendesk, and HaloITSM. The results of the comparisons that have been made regarding the three ITSM vendors, according to our study the Fresh Service vendor is the best ITSM software. Vendor Fresh Service is superior to the other two vendors in terms of UI appearance, and ease of use. The features provided are quite complete compared to other vendors. Because this comparison is carried out through independent studies in the internal sphere, the advantages and disadvantages will be skewed towards the needs of the university as the organization that oversees the UPT-TIK. This study is expected to provide an overview of selecting ITSM software vendors, especially for ICT implementing units at universities.*

**Keywords : ITSM; University IT Unit; Fresh Service; Zendesk; HaloITSM;**

## **INTRODUCTION**

Adapted from (Profil UPT-TIK UPN Veteran Jawa Timur, n.d.) UPT-TIK (Information and Communication Technology) is a technical service unit at the university level. The forerunner of UPT-TIK began in 1984, in the form of Computing and Statistics Laboratory services in the Coordinating Dean's office, Jl. Central Tambakbayan 17-19 Surabaya. In line with the East Java "Veteran" UPN development program, which was marked by the move to the Jl. Raya Rungkut Madya-Gununganyar in September 1987, the Computing and Statistics Laboratory was entrusted to the Faculty of Agriculture. In line with the development and complexity of managerial issues, since 1994, the status has been gradually upgraded to UPT Computer Center which is at the university level; in 2007 changed to UPT Telematics and in 2016 changed to UPT-TIK (Information and Communication Technology). The Information and Communication Technology Technical Implementation Unit (UPT) is a technical service unit at the University level that has a service function in the Information and Communication Technology (ICT) sector or often referred to as IT (Information Technology). , students and services to the general public UPT Information and Communication Technology was originally named UPT Puskom which was formed in 1984 in the form of Computing and Statistics Laboratory services in the office of the Coordinating Dean Jl. Tambakbayan Tengah 17-19 Surabaya. In September 1987 UPN "Veteran" East Java moved to a new campus on Jl. Raya Rungkut Madya - Gununganyar, then the Computing and Statistics laboratory was temporarily entrusted to the Faculty of Agriculture. With the development of IT and the complexity of IT managerial issues, since 1994, its status has gradually been upgraded to UPT Computer Center at the University level and directly responsible to the Chancellor; and in 2016 following the increasing burden of duties and responsibilities changed to UPT-TIK.

With their vision: "Become A National Leading Center for Information and Communications Technology Development, Management and Services"(Visi & Misi UPT-TIK UPN Veteran Jawa Timur, 2022) and continued to mission:

1. Developing Information and Communication Technology According to the Development of the Age.
2. Managing Information and Communication Technology in a Good and Planned manner to Support the Implementation of Higher Education's Tri Dharma.
3. Providing Good and Quality Service.
4. Establish Cooperation in Information and Communication Technology with Related Partners.

Making them have Main Duties & Functions (Tugas Pokok & Fungsi UPT-TIK UPN Veteran

Jawa Timur, n.d.) which main duties of UPT-TIK consist of:

1. The administration section is in charge of making annual work plans and managing UPT-TIK budgets.
2. The Data Processing Section is in charge of managing the data and information architecture. active ICT services and future ICT services.
3. The Application / Information System section is in charge of planning and maintaining application programs and information systems
4. The Network Development Section is tasked with reviewing managing and maintaining the University's internal network system
5. The WebMaster section is in charge of managing the university website and coordinating sub-domains of university and faculty work units
6. Computer Staff Lecturer groups who are competent in the field of ICT and support the implementation of ICT services at the University.

With those duties, UPT-TIK functioned to:

1. Develop short, medium, and long-term activity program plans for UPT-TIK as guidelines for carrying out tasks.
2. Coordinating subordinates in carrying out tasks so that good cooperation is established.
3. Develop hardware by proposing additions and maintenance for the implementation of various activities that have been planned.
4. Organizing computer education and training to improve the skills and abilities of UPT-TIK staff and other work units.
5. Carry out the affairs of making programs/information systems following the needs of other work units, and produce the types of information needed by sub-work units.
6. Prepare UPT-TIK reports following the results that have been achieved as the responsibility for carrying out tasks.
7. As the manager of the University website: [www.upnjatim.ac.id](http://www.upnjatim.ac.id)

Van Bon et al., (2002) in Galup et al. (2009) from “An overview of IT service management” stated that a branch of service science called information technology service management (ITSM) focuses on IT operations including service support and service delivery. ITSM is a discipline for managing IT operations as a service that is process-oriented and accounts for 60% to 90% of the total cost of IT ownership, in contrast to the conventional technology-oriented approaches to IT. IT service providers must now consider the quality of the services they offer and concentrate on their relationships with clients rather than focusing on technology and internal organization.

## RESEARCH METHODS

The need for ITSM software stated by (Harcenko, 2010) needs to be answering several question:

- Are the staff members of the organization happy with the current state of the IT service support quality?
- Are end-users aware of the proper steps to take in the event of a problem? •Was the incident-resolution procedure controlled?
- Is data on the efficient use of human resources available?
- Will the organization experience issues if the number of employees increases?
- Have all obligations and services been identified and defined?
- Are common solutions for everyday occurrences defined?
- Is it possible for clients to learn the status of the occurrences they have reported?
- Are IT service support costs known to the company?

With those questions answered, the next step is to find the proprietary software of the service desk management system (SDMS) as used by (Tanovic & Mastorakis, 2016) and (Tanovic et al., 2014) . It showed that five ITIL processes are supported by this ITSM, which are divided into three phases. These processes are Service Catalogue Management (Service Design), Service Asset & Configuration Management (Service Transition), Change Management (Service Transition), Incident Management (Service Operation), and Problem Management (Service Operation). Bosu et al. (2019) in “Evaluation of IT Service Desk: A Case Study” applied the weighted requirement approach in evaluating the service desk system to eleven different systems and found that the top four systems were Freshdesk, Zendesk, Jira, and osTicketrespectively. Based on user preferences and a user scoring matrix, Freshdesk received the highest score in this instance and satisfies the majority of the stakeholders' desired features.

To shorten the research process, we decided to start with three software; Fresh Service, Zendesk, and HaloITSM. At the time of this research, all alternative service desk systems, including the most recent version of the software, were evaluated using the requirements outlined in the model (Bosu et al., 2019). The three software; Fresh Service, Zendesk, and HaloITSM are categorized, as IT service desks, where Service desk managers must provide high-quality services while keeping operating costs at a minimum. If we disregard the intuitive approach to problem-solving, which is a privilege of visionaries, there are some ways to accomplish the prior claim (Bober, 2014).

Since there is no accepted evaluation criterion, ITIL success is difficult to quantify. An ITIL implementation effort cannot produce a single tangible result whose worth can be assessed in isolation. Instead, what is important is how process improvement initiatives affect organizational performance. However, because various processes handle various areas and services, these improvement initiatives may result in a variety of benefits. These advantages could be challenging to locate, seize, and quantify. The "actual implementation status" of the entire set of ITIL processes and "perceived benefits" are the two types of dependent variables

we will provide as potential candidates for gauging implementation success.(Iden & Eikebrokk, 2013).

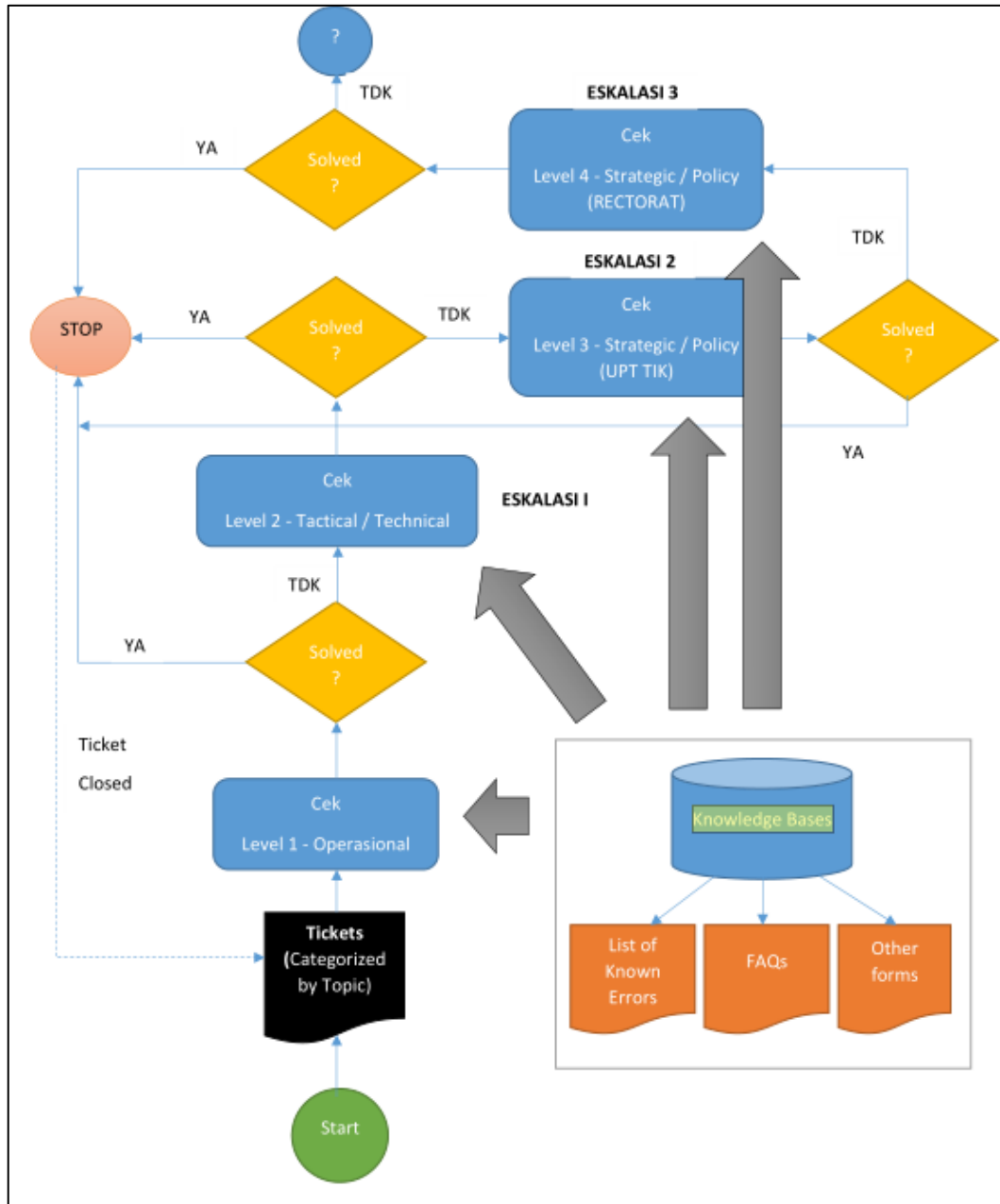
That said that this comparing research will do by independent study. Observations were made by direct observation or survey at the UPT-TIK (Information and Communication Technology) UPN "Veteran" East Java. The purpose of this observation is to be able to determine the appropriate can determine the appropriateness of the project to be carried out. Independent studies are carried out independently directly in the UPT ICT (Information and Communication Technology) lab at UPN Veterans East Java. The purpose of this independent study was carried out to find out the features as well as the advantages and disadvantages of each ITSM software which will later be chosen which is the best.

## **RESULTS & DISCUSSION**

Based on an internal decision of UPT-TIK, a workflow is drawn up in creating or using a system that is capable of doing what is called the IT Service Desk according to internal needs. Workflow is drawn into a flowchart as described in Figure 1. Workflow of Escalation Diagram. Students, lecturers, and staff need to input questions, complaints, or suggestion names by ticket in a system. All tickets are categorized by topic to make it easier to solve by continuing to the responsible unit. All inputted questions from a student, lecturer, and staff, such as a list of known errors, FAQs, and others are saved in the knowledge base before being submitted to the responsible unit. On Level 1, the ticket an operational check is carried out by the unit concerned, if at this level the ticket can be resolved then the ticket will be closed, the problem is considered resolved by notifying the reporter but if not then it will continue to Level 2. Level 2 is stage 1 of escalation, namely checking tactically or technically, if at level 2 the problem is resolved, the ticket will be closed and the reporter notified, but if not then level 3 will be continued. This relates to everything related to IT, if at level 3 the problem is resolved, the ticket will be closed and notified to the reporter, but if not then it will be continued at level 4. Level 4 is escalation stage 3, namely conducting direct strategic or policy checks. carried out by the Rector, where if it reaches the level and the top stage will be resolved related to the main policy. Based on the previous statement where each ticket will be recorded in the knowledge base, the use of data in

the knowledge base is displayed on the FAQ page which covers all UPT-TIK services (FAQ – UPN “Veteran” Jawa Timur, n.d.).

Three software are compared by their advantages or disadvantages, below are the result based on their program guide or another document.



**Figure 1** Workflow of Escalation Diagram  
Source: UPT-TIK, 2022

## ***FRESH SERVICE.***

Freshservice is a cloud-based IT service desk that aims to manage incidents, change management, release management, and assets in companies anywhere and anytime. (Freshworks, n.d.)

### *Advantages:*

1. Service desk software that is easy to customize according to the needs of the company itself.
2. Employee/agent performance productivity can increase due to the IT service desk from fresh service.
3. Can minimize the resources used to save operational costs
4. Provide efficiency in work because it reduces dependence on manual work
5. The "Ticket" feature can make it easier for agents to respond to a list of information, both incident tickets and service requests.
6. In fresh service, there is also a knowledge base feature that is very useful as an independent solution for customers or only used by internal parties.
7. There is also an "Asset Freshservice" tab/menu which has several features, namely inventory management, contract management, auto asset discovery, software license management, and configuration management. So agents/admins can manage, track, and evaluate all inventory, both software and hardware, very easily.
8. With good management, companies can avoid losses and plan to purchase inventory through asset lifecycle information.
9. With the "Problem, Change, and Release Management" feature, it can reduce up to 40% of incidents on the helpdesk so that it can help companies minimize the risk of disruption to the business.
10. Can reduce data redundancy.

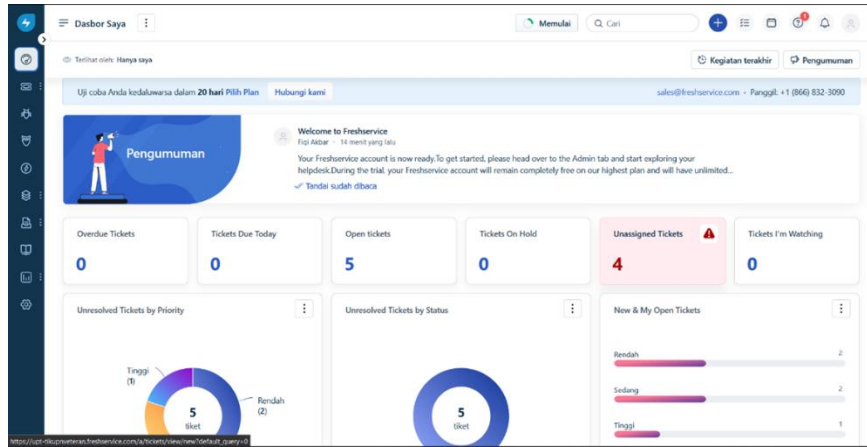
### *Disadvantages:*

1. Everyone can easily access it provided they know the domain.
2. Manage license data, it can only be done as a package and cannot be separated (different licenses).
3. Several features are not related to other features.

### *UI*

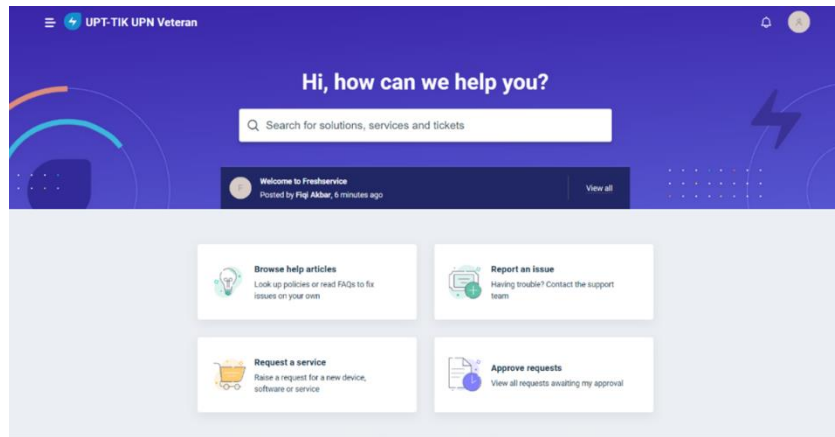
The image below is the display of the dashboard or the main page of the fresh service software which contains information about ticketing services. The image below is a page from a user/agent who wants to make a service request to the admin. The user/agent can make the

required request according to the category in the requested service.



**Figure 2** FreshService Dashboard page

The image below is a page from a user/agent who wants to make a service request to the admin. The user/agent can make the required request according to the category in the requested service



**Figure 3** Requester page



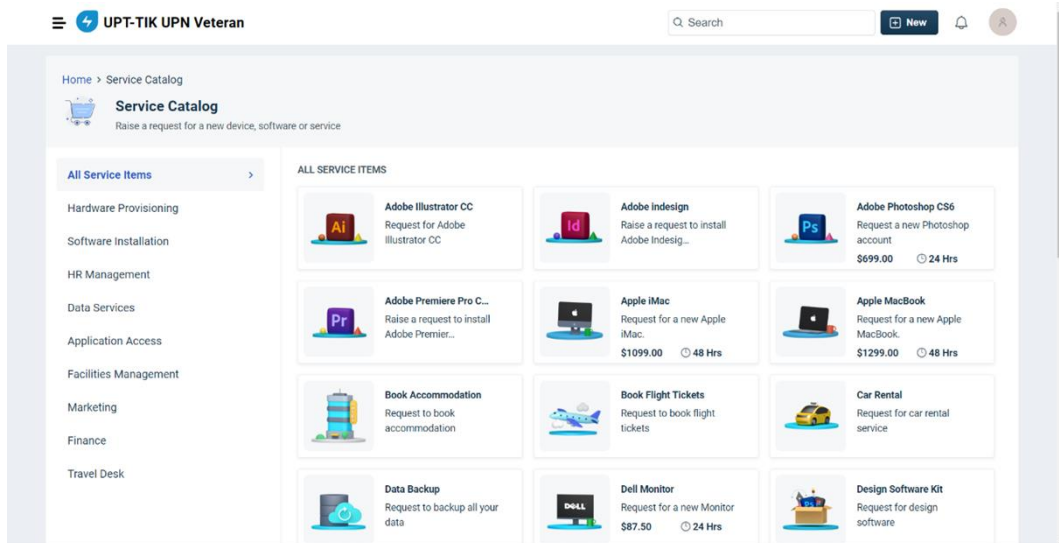


Figure 4 Request Category

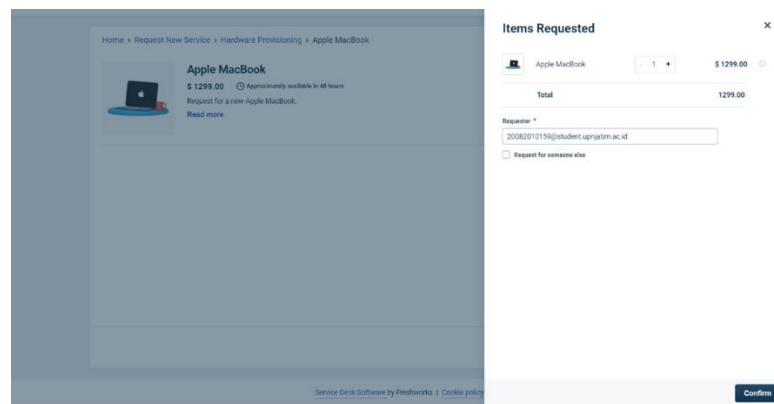


Figure 5 Request Item

The page below is one of the services, namely ticketing which contains a list of tickets from the requester, which can be agents or other users. Ticketing services are very detailed by providing who the applicant is, the condition of the ticket, the status of the ticket, and the priority of the ticket

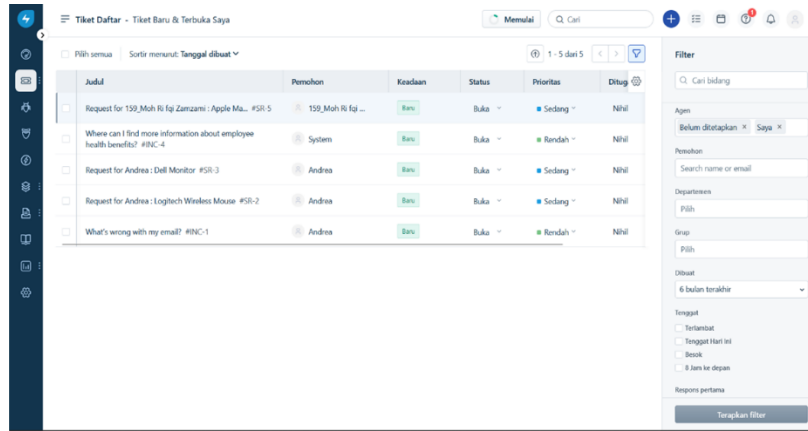


Figure 6 Ticketing Service

Below is a display of all the services available in the Fresh Service Software

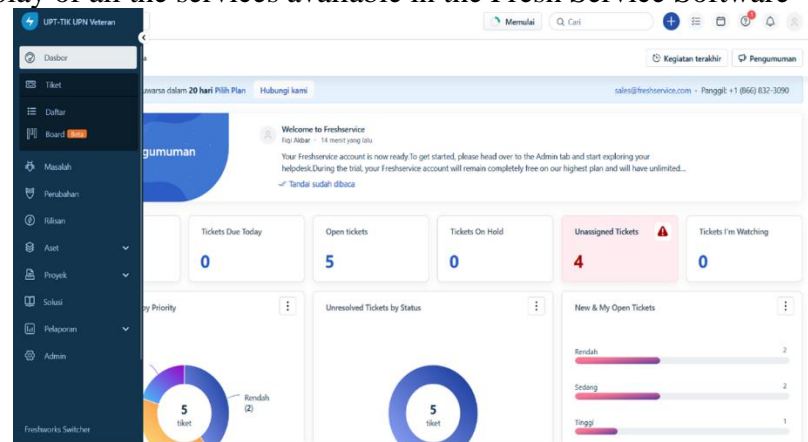


Figure 7 Fresh Service Menu

**Zendesk.**

Zendesk is a CRM (Customer Relationship Management) application, you could say Zendesk is an application that allows customers to communicate directly using live chat or something else (ZenDesk Getting Started Guide, n.d.).

*Advantages:*

1. Helping a company with ticketing services. Focus on serving customer service or end customers.
2. There is a talk feature that can later communicate between the admin and the customer.

*Disadvantages:*

1. Unable to create an account for a user.
2. Can only serve the ticketing feature for end users.

*Zendesk features:*

1. Support

In this feature, the customer service tool will collect all existing questions into one. Once the questions are collected it is easier to respond. After that, there is also an automatic ticketing system that functions to reduce potential loss of problems.

2. Guides

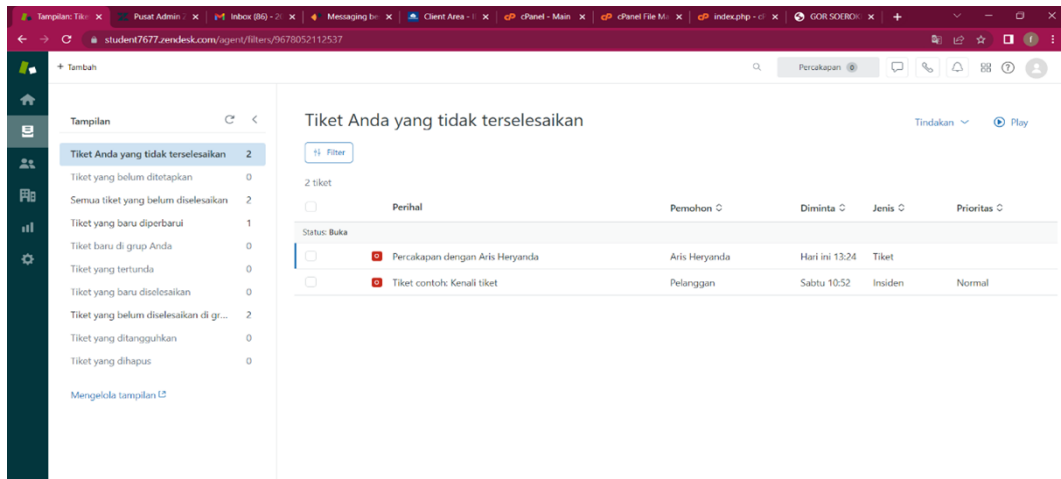
The guide feature is a help guide management tool commonly referred to as your help page. This page complies with search engine optimization rules, so when someone accesses it via Google, they can immediately find this help page.

3. Talk

Through this feature, customers can receive telephone calls directly and they can also get a number for a complaint they are facing.

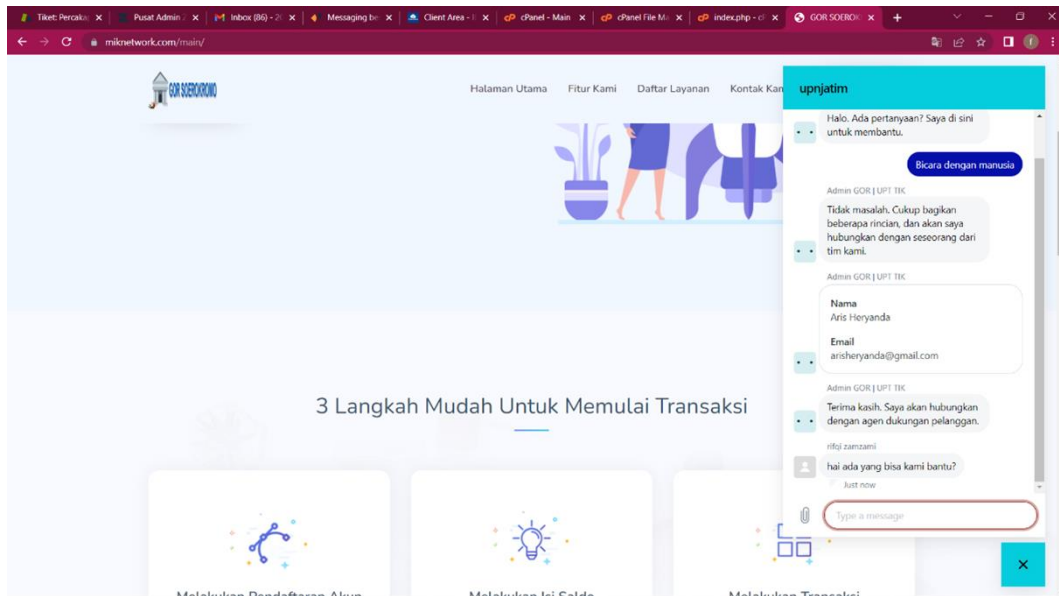
*UI*

The display below is the ticketing service menu from Zendesk. The display shows the most complete category of tickets, from unresolved tickets to deleted tickets.



**Figure 8** Zendesk Dashboard page

The display below is a display from other websites that have been integrated with Zendesk. Customer service performed from Zendesk can be connected via other websites making it easier for CS to fulfill customer/user requests.



**Figure 9** Customer Service from Zendesk

### ***HaloITSM.***

HaloITSM offers modern and intuitive IT Service Management (ITSM) software that will empower your IT team to deliver ITIL-aligned services quickly and efficiently (Guides - HaloITSM, n.d.).

#### ***Advantages:***

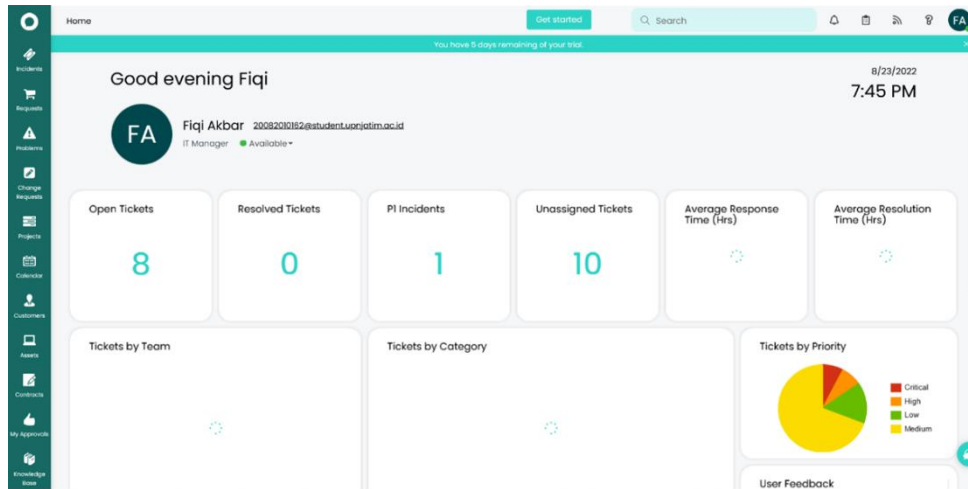
1. Helpdesk software from HaloITSM which is easy to customize according to the needs of the company itself.
2. The features of HaloITSM are easy to understand so users don't take too long to adapt to the software.
3. In the change request agent feature, it can make change requests according to needs and implement change requests in sequential stages according to approval.
4. There is a Knowledge Base feature which is very useful for users because it contains basic information that might help users.
5. The appearance of HaloITSM software is easy to use because it looks simple so users have no difficulty using the software.
6. The categories of problems, requests, and incidents are divided into 3 different features so that problems or requests can be easily understood because they are following the specified categories.
7. There is a calendar feature that makes it easy for agents or managers to make leave requests or schedule meetings.
8. There is asset management where this feature is needed for companies to manage their assets so that they can reduce losses for the company.

*Disadvantages:*

1. In our opinion, the change request and request features have similarities, confusing the two features. Why not make it into one feature so it doesn't get confused.
2. We find it difficult to distinguish between the incident ticket feature and the ticket problems because the contents are slightly similar between the two tickets.

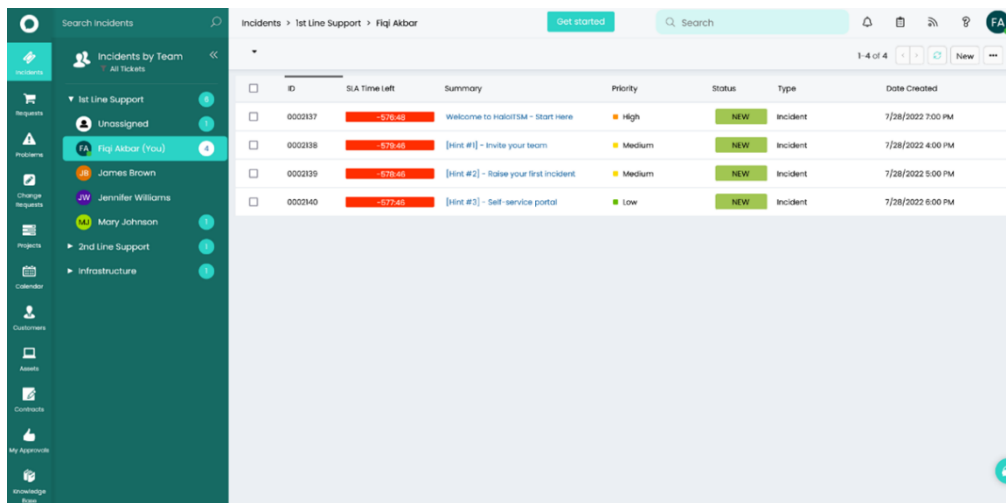
*UI*

The display below is the dashboard page of the HaloITSM software which contains information about tickets to ticket diagrams according to category



**Figure 10** HaloITSM Dashboard page

The display below is a service ticket category incident that contains detailed information such as ID, SLA Time left, Summary, Priority, Status, Type ticket, and Date Time.



**Figure 11** Incident Menu page

### **Comparison Results**

After our independent study and trial session, we compare and the result is in the table below.

**Table 1** Vendor Comparison

No.	Variable	Vendor		
		Fresh Service	Zendesk	HaloITSM
1	Ease of Use	Agree	Agree	Disagree
2	Completeness of Features	Agree	Disagree	Agree
3	Display UI (User Interface)	Agree	Agree	Disagree

Source: (Zamzami et al., 2022)

From the study independent of ITSM comparison (Freshservice Review: Pricing, Pros, Cons & Features | CompareCamp.Com, n.d.), assessment table above, and the evaluation when conducting trials on 3 ITSM software, namely Freshservice, Zendesk, and HaloITSM, we can conclude the comparison results as follows:

1. In our opinion, software from Fresh service vendors is superior in appearance, convenience, and detail to Zendesk and HaloITSM software. In the Fresh service software, the appearance is easy to understand for novice users and these features have clear names and functions so they are easy to use.
2. The software from the Zendesk vendor itself is a good helpdesk software but the drawback is that it has few features compared to the other two vendors. The Zendesk software itself only focuses on the end user, namely the customer.
3. As for the HaloITSM vendor, in our opinion, the helpdesk software is very good because the features available on HaloITSM are almost the same as the Helpdesk from Freshservice, but the difference is the appearance and the details. And on the HaloITSM software, an explanation of each feature is difficult to understand for laypeople or beginners.

### **CONCLUSION & SUGGESTION**

The results of a comparison of the three IT Service Management software vendors found that the Fresh Service vendor is superior compared to the other two vendors because it is superior in terms of UI appearance, ease of use, and the features provided are quite complete. From the conclusions above, we provide advice to UPT-TIK UPN "Veteran" East Java, if need Helpdesk

software, then choose a Fresh Service vendor because of the advantages we have mentioned above.

### ***Research Implications***

An organization needs to identify the needs related to service management and establish a methodology for selecting ITSM. This research can provide an overview of the enterprise how to approach this. Organizations should observe service management in their routine daily practice and then compare it with best practice in certain standard frameworks and available ITSM. We believe that this reciprocal relationship will help in achieving the optimal point of IT services in an organization.

### ***Research Limitations***

There are many standard frameworks and ITSMs available. This research is limited to evaluating only three ITSMs. We also believed that it is required to have an evaluation phase in sufficient longitudinally research to be able to reveal organizational needs in terms of service management and whether this can be accommodated by the ITSM being evaluated. Evaluation in this study also does not involve evaluation of end users, either in the form of perceptual or objective evaluation, (e.g. : SEM statistical approach or using frameworks such as ISO 25010).

### ***Suggestion for Further Research***

There are several potential further studies that can be carried out. First, future research may involve more ITSM. This includes taking into account the potential to develop ITSM independently (in-house). We believe that this discourse is necessary. Since the needs of organizations vary greatly considering the size of the organization and the available resources. Especially considering the availability of several IT governance frameworks that need to be synergized. We also believe that this can be used as an option for further research. Another research agenda which we believe important and interesting is the evaluation from the point of view of user perception (i.e. Statistical SEM) and evaluation based on certain frameworks or standards (i.e. ISO 20510) where this can also be done with a longitudinal research approach.

## REFERENCES

- [1] Bober, P. (2014). Simulation for IT Service Desk Improvement. *Quality Innovation Prosperity*, 18(1), 47–58. <https://doi.org/10.12776/QIP.V18I1.343>
- [2] Bosu, M., Abuaiadah, D., Khanna, P., Nepia, S., & Palmer, D. (2019). Evaluation of IT Service Desk: A Case Study. *The 10th Annual CITRENZ Conference 2019*, 72. <http://researcharchive.wintec.ac.nz/6993/>
- [3] *FAQ – UPN “Veteran” Jawa Timur*. (n.d.). Retrieved January 17, 2023, from <https://upttik.upnjatim.ac.id/faq/>
- [4] *Freshservice Review: Pricing, Pros, Cons & Features | CompareCamp.com*. (n.d.). Retrieved January 16, 2023, from <https://comparecamp.com/freshservice-review-pros-cons-pricing-customer-support-software/>
- [5] Freshworks. (n.d.). *Freshservice-Intelligent, right-sized service management solution*. freshworks. Retrieved January 16, 2023, from [www.freshservice.com](http://www.freshservice.com)
- [6] Galup, S. D., Dattero, R., Quan, J. J., & Conger, S. (2009). An overview of IT service management. *Communications of the ACM*, 52(5), 124–127. <https://doi.org/10.1145/1506409.1506439>
- [7] *Guides - HaloITSM*. (n.d.). Retrieved January 16, 2023, from <https://haloitsm.com/guides/>
- [8] Harcenko, M. (2010). *IT Service Desk Implementation Solutions*.
- [9] den, J., & Eikebrokk, T. R. (2013). Implementing IT Service Management: A systematic literature review. *International Journal of Information Management*, 33(3), 512–523. <https://doi.org/10.1016/J.IJINFOMGT.2013.01.004>
- [10] *Profil UPT-TIK UPN Veteran Jawa Timur*. (n.d.). Retrieved January 16, 2023, from <https://upttik.upnjatim.ac.id/index.php/profil>
- [11] Tanovic, A., & Mastorakis, N. E. (2016). Advantage of using Service Desk Management Systems in real organizations. *Nternational Journal of Economics and Management Systems*, 1, 81–86. [www.wseas.org](http://www.wseas.org)
- [12] Tanovic, A., Orucevic, F., & Butkovic, A. (2014). Advantages of the implementation of Service Desk based on ITIL framework in telecommunication industry. In *Mathematics and Computers in Science and Industry* (pp. 244–258). <http://www.inase.org/library/2014/books/bypaper/MCSI/MCSI-41.pdf>
- [13] *Tugas Pokok & Fungsi UPT-TIK UPN Veteran Jawa Timur*. (n.d.). Retrieved January 16, 2023, from <https://upttik.upnjatim.ac.id/index.php/tugas-pokok-fungsi>
- [14] *Visi & Misi UPT-TIK UPN Veteran Jawa Timur*. (2022). <https://upttik.upnjatim.ac.id/index.php/visi-misi>
- [15] Zamzami, Moh. R., Trinanda, F. A., & Wibowo, A. H. (2022). *Internship Report - ANALISIS PERBANDINGAN SOFTWARE ITSM DAN RANCANGAN DATA MODEL PADA SISTEM UPN “VETERAN” JAWA TIMUR*.
- [16] *ZenDesk Getting Started Guide*. (n.d.). Retrieved January 16, 2023, from [www.zendesk.com/support@zendesk.com/1.888.670.4887](http://www.zendesk.com/support@zendesk.com/1.888.670.4887)