



A Study of the Diagnosis on the Usage of Software In Billing Process

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Abstract:

This research explores how software has revolutionised the billing process in modern corporate operations. A number of benefits become apparent when organisations go from manual to software-driven billing processes, including enhanced efficiency, better accuracy, and flexibility to specific requirements. However, difficulties, including upfront expenses, staff learning curves, security issues, and the possibility of technological difficulties, also manifest. This study attempts to diagnose the use of software in billing by giving readers a thorough overview of its present state and potential future developments. This intends to shed light on the advantages and difficulties of switching to software-driven billing systems. It also looks at current software trends and possible future developments that can improve organisations' billing processes even further. This research assists firms in navigating the digital billing frontier by examining real-world case studies, industry trends, and expert views. In the end, it emphasises the potential and difficulties that businesses face when they adopt software-driven billing solutions in a constantly changing business environment.

Keywords: Accuracy improvement, Industry trends, Expert views, Business environment, Staff learning curves.

Introduction:

The use of software has become widespread across many industries in the current world, where technology is king, profoundly changing how firms run. The billing procedure is one area that has undergone a considerable paradigm change. Software-based solutions have progressively replaced conventional manual invoicing and billing methods, providing unprecedented levels of efficiency, accuracy, and ease. This research sets out on a thorough investigation into the diagnosis of the use of software in the billing process, illuminating its influence, benefits, difficulties, and possibilities for the future. Revenue tracking, expense monitoring, payment handling, and invoicing comprise several of the pivotal responsibilities constituting the financial invoicing procedure, which is occasionally designated as the underlying construct supporting an entity's entire monetary framework. These processes formerly depended mainly on paper-based techniques, which were frequently prone to mistakes made by humans, delays, and inefficiencies. However, once the digital era began, companies realised the potential of software to automate these processes, opening the door for a radical change. The increased efficiency it provides throughout the invoicing process is one of the main benefits of using software. Manual billing procedures require a lot of work and are prone to

mistakes. Rather than manually performing repetitiously tedious operations, software automates many once cumbersome tasks related to invoicing, payment tracking, and bookkeeping, allowing greater focus on higher-priority duties while simultaneously streamlining workflows and simplifying oversight of economic records and fiscal balances. This quickens the billing cycle and lowers the possibility of expensive errors. Billing software is a crucial tool for organisations to streamline their billing processes, reducing errors like math errors. It helps in ensuring accurate invoices and compliance with legal and regulatory requirements. Integration of accounting, inventory management, and CRM systems with billing software provides real-time financial data insights, improving decision-making. However, the initial cost can be a concern for small firms, potentially leading to a digital gap. Proper training and cybersecurity measures are essential to minimise issues and ensure seamless integration. Redundancy and disaster recovery plans are also crucial for a smooth transition. In order to undertake a complete diagnostic of the use of software in the billing process, this research will dive further into these elements. We seek to give a thorough grasp of the existing environment and the prospects for software-driven billing processes by examining real-world case studies, market trends, and expert viewpoints. In the end, this investigation aims to

illuminate the potential and difficulties that organisations have when navigating the digital billing frontier, providing insights that might guide strategic decision-making in this crucial area.

Objectives:

- To demonstrate the effectiveness and setbacks of using software in the billing process.
- To discuss the challenges of traditional methods of billing without software's
- To evaluate the user-friendliness of various billing software.

Review on Literature:

Devanshi Desai et.al (2021)ⁱ in their study entitled says that "INVOICE PROCESSING USING RPA & AI." This article shows how to install robotic process automation (RPA) and automation everywhere by using tools like artificial intelligence (AI) and machine learning (ML). The goal is to automate invoice handling with the intention of increasing efficiency and lowering costs. The system makes use of Intelligent Document Processing (IDP) to categorise and extract data from invoices and the IQ Bot to analyse unstructured data using AI technologies like text classification and computer vision. Using AI-powered bots, the process entails producing, verifying, and processing invoices. A market study emphasising the demand for automated billing in regular business operations is also included in the implementation. The solution's SWOT analysis identifies its advantages, disadvantages, opportunities, and threats. The findings demonstrate that automation efficiently processes bills and that system accuracy increases with training.

Christo Ananth et.al (2015) conducted a study on the topic "GSM-BASED AUTOMATIC ELECTRICITY BILLING SYSTEM." In this study, we discuss the development of a GSM-based autonomous metre reading system. The system is made up of a GSM module installed at home and an embedded microprocessor. The data that the microcontroller reads from the energy metre to which it is linked is sent to the associated GSM module through a serial connection. The information is sent to the office of the Electric Board (EB), where the unit value is obtained and utilised to determine the customer's bill. The microcontroller may turn off the electricity to the corresponding residence if the bill is not paid on time. To meet power demand, the system has a power management concept that enables consumers to use a restricted quantity of electricity when in limitation mode. This system has automated invoicing, fewer metre reading mistakes, and effective power management as benefits. The method is more convenient and effective thanks to GSM technology, which permits wireless connection between the microcontroller and the EB office.

Muzhir Shaban Al-Ani et.al (2012) carried out research named "Billing System Design Based on the Internet Environment." The construction of an Internet billing system that permits electronic payment of invoices through fictitious banks is discussed in the article. For telecommunications firms, the billing system is essential because it processes call information and service use data, creates bills, and manages payment processing. Consumers may now read statements and make e-payments online thanks to the important services of electronic billing and bill presentation. The expenses associated with paper-based invoicing are reduced by internet-based bill display and payment systems, which provide tailored communication between billers and payers. Customer registration, bill verification, electronic check payment, and processing by the biller's system and the bank are all steps in the online billing system workflow. The impact of this technological choice on corporate legal departments has both possible advantages and disadvantages.

Methodology:

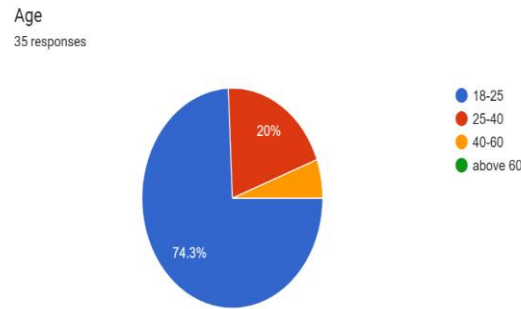
This study is analytical in nature. It seeks to evaluate the causes and effects of the trend in question in order to gain a better understanding of it. This knowledge can then be used to develop strategies to address the trend and its associated issues. This study includes measures to reduce the negative effects of the trend or methods to increase positive outcomes. The research study's objectives led to the decision to use stratified sampling. Respondents for this study are chosen at random and divided into subgroups based on age, work experience, and willingness to use the billing software. The study also included participants from various parts of Tamil Nadu. The sample was collected from 35 consumers all over Tamil Nadu. The sample size for this research study is 35 people. The appropriate information was collected using a structured questionnaire. Using questionnaires, primary data were gathered. Websites and articles in publications were used to collect secondary data. These types of data are used, and the objectives guided the choice of statistical tools. The Tools used for analysis were pie charts.

Data Analysis:

A questionnaire has been circulated via Google Forms, containing not only quantitative data but also qualitative data. Quantitative data includes the number of people choosing a particular choice, while qualitative data includes their choices, which helps us obtain accurate data based on the consumers opinions. This allows us to gain a better understanding of the preferences of our customers.

Age of the Respondents:

The age ranges are 18–20 years, 25–40 years, 40–60 years, and above 60 years.

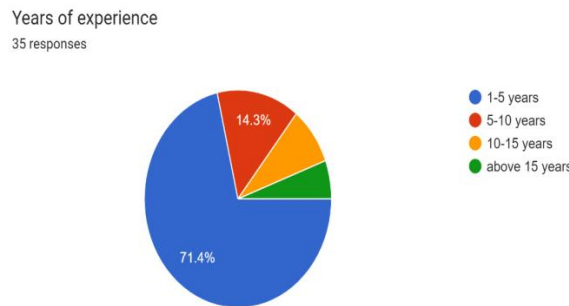


From the above data, most people in this field are within the age limit of 18–25, where they hold a 74.3 percent place in the survey, and in the next place, people with the age category of 25–40 have a 20 percent place in this final. We can understand that young people are more interested in

this field than old people. By the way, they also have an education in software, which they handle.

Years of Experience:

The years of experience range from 1–5, 10–15, and above 15 years.



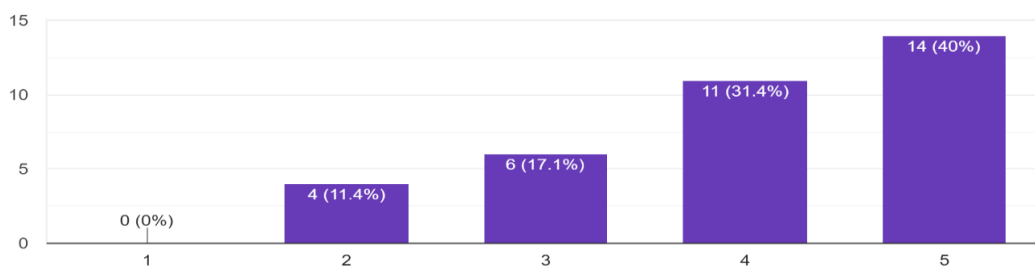
From the above chart, we can see that for people who took the survey, their work experience in the billing field lies between 1 and 5 years, with a maximum percentage of 71.4. In the next place, there are some people with work experience of 5–10 years, with a 14.3 percentage. Even in this field, there are some people with work experience of 10–15 years and above. The reason why experienced

people are low in this field is their lack of education about the field and the software involved in the billing process.

Familiarity with the Billing Process in Your Organization:

This question assesses the organization's workforce's familiarity with the billing process, and the response is evaluated on a scale of 1 to 5.

How familiar are you with the billing process in your organization?
35 responses



From the collected data, we can find that many people are familiar with the billing process involved in their organisation. From the above chart,

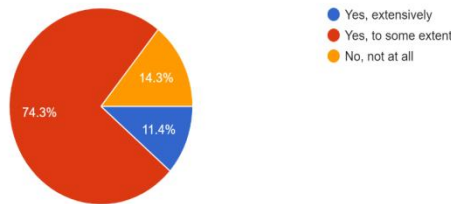
14 people, or 40 percent, are most familiar with the billing process involved in their organisation. And some people have given 4 points where they are a

little lacking in their field; the count is 13 people who rated 4 as their point. comparing this, there are 4 people who rated 2 who have their point where they are lacking more in their field. The reason

behind this may be the experience and education they gained, and even technology plays a vital role in this process.

Usage of Programming Languages in the Organization Process:

Are programming languages used in your organization's billing process?
35 responses

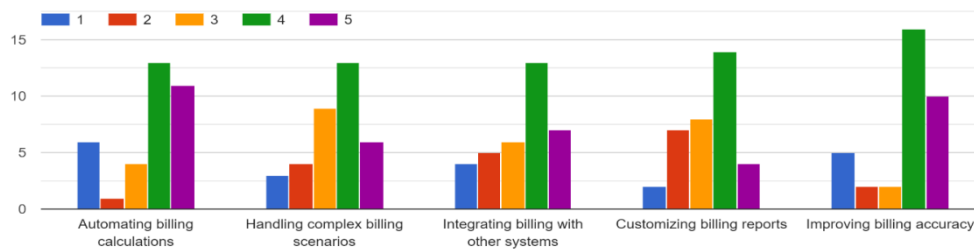


There are three possible answers to this query: yes mostly, yes partially, and no not at all. The above chart clearly shows that in many organisations, the programming language is used in their billing process to some extent; it holds 74.3 percent of the total survey, and with 11.45%, there are some organisations that use the programming language extensively where the need for billing is high in that place, even though there are some organisations with 14.3% that are not even using the programming language in their billing process.

Primary Reasons for Using Programming in the Billing Process:

The question relates to the rationale behind the company's use of programming language in their billing software, and the rationale is broken down into five categories: automating billing calculation, managing complex billing scenarios, integrating billing with other systems, customising billing reports, and increasing billing accuracy. Each kind can be rated here up to a scale level of 5.

What are the primary reasons for using programming in the billing process?

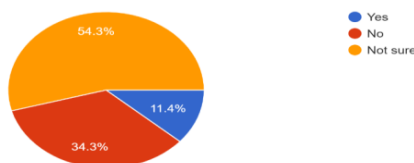


In the question, we have given five reasons why programming is used in the billing process. Most people chose the reason of improving billing accuracy, where most people rated it with 4 points. Next, customising billing reports has the second-highest rating of 4 points, followed by automating billing calculations, handling complex billing scenarios, and integrating billing with other

Challenges Or Difficulties Faced When Implementing Programming In The Billing Process:

The possible solutions to this question, which directly pertains to whether the company is experiencing any issues with the billing process, are yes, no, and not sure.

Are there any challenges or difficulties faced when implementing programming in the billing process?
35 responses

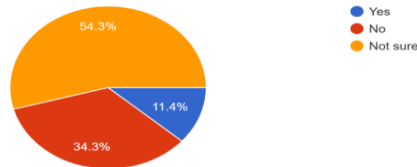


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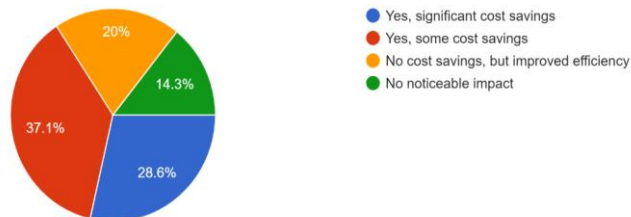
For the above question, most people are not sure whether there are any challenges or difficulties faced when they are implementing programming in the billing process. The reason may be a lack of work experience in the field or a lack of programming knowledge. But some people find there is no problem in implementing the programming in the billing process (34.3 percent). But there are also some people who find that there

are some problems in the process. In this place, experience and technology play an important role.

Cost Savings or Efficiency Gains after Introducing Programming in Billing

After the introduction of programming in billing, the possible solutions are: yes, there will be large cost savings; yes, there will be some cost savings; no, there won't be any cost savings but there will be better efficiency; and no, there won't be any obvious impact.

Have you noticed any cost savings or efficiency gains after introducing programming in billing?
35 responses

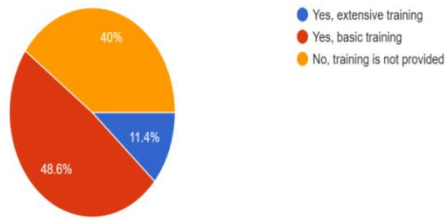


In this regard, many organisations have noticed some cost savings after introducing programming in the billing process (37.1 percent). and some people find significant cost savings after using this method. But some companies find no cost savings, but there is improved efficiency in it. There is another category where the companies find no impact after introducing the programming in billing.

Training Provided To Employees Who Work With the Programming in the Billing Process

This inquiry asks the company if it offers any training to the staff members who work there. The organisations' replies are: Yes, extensive training, Yes, basic training, No, training is not offered.

Is training provided to employees who work with programming in the billing process?
35 responses

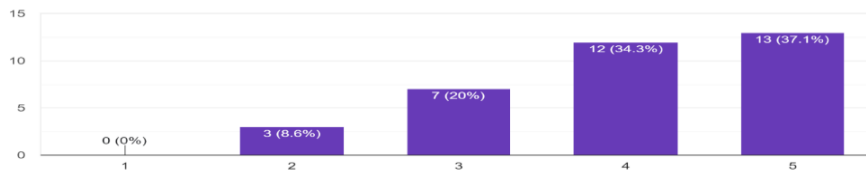


In many organisations or companies, they provide basic training about the programming in the billing process, but more equally, there are some companies where there is no training provided to the people who are working there. 11.4 percent of companies are providing extensive training to their employees.

Satisfaction with the Current Usage of Programming in the Billing Process:

The question asks users who are all using the software for the billing process how satisfied they are with it, and they evaluate it on a scale of 1 to 5.

Overall, how satisfied are you with the current usage of programming in the billing process?
35 responses

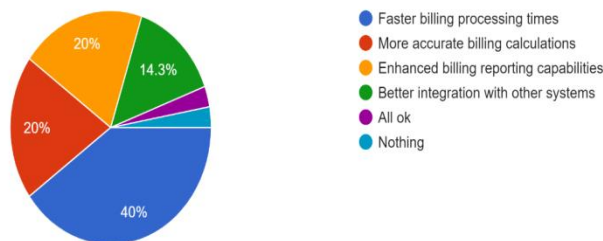


Out of 35 people, 13 say that they are more satisfied with the programming in the billing process by rating it 5 points. and equally, 12 people are a little lower than the satisfaction level, where they need some improvement in the process.

This question aids in concentrating the study's attention on the areas that need improvement to provide the best billing experience, and we provided four of them: quicker billing processing times, more accurate billing calculations, improved billing reporting capabilities, better system integration, and lastly others.

Improvements Expected By Further Optimizing The Usage Of Programming In Billing:

What improvements do you expect by further optimizing the usage of programming in billing?
35 responses

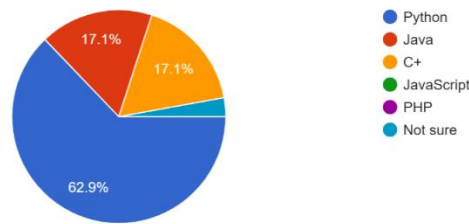


In this regard, most people want to improve the speed of billing processing by optimising the Programming In Billing. And The Next Improvement They Need Is More Accurate Billing Calculations And Enhanced Billing Reporting Capabilities.

Programming Languages Utilized In the Billing Process

This inquiry seeks information on the types of programming languages that the firm uses in its billing process. Python, Java, C+, JavaScript, PHP, and not sure are the alternatives provided.

Which programming languages are utilized in the billing process?
35 responses



From this response, we can find that Python is mostly used in many companies, which holds a percentage of 62.9 percent. and next, Java and C+ are equally used in many companies.

Findings:

We conducted a survey through Google Forms and collected both quantitative and qualitative data to understand customer preferences in the billing field. The vast majority of those polled, being in the age range of legal adulthood through the mid-twenties, conveyed a robust interest of 74.3 percent concerning this specific realm of academic inquiry. Young individuals also had an education in software. Work experience in the billing field ranged from 1 to 5 years, with a maximum of 71.4 percent. Those at a moderate experience level in the field, having spent five to ten years amid dedicated work, paled in comparison to other seasoned professionals whose careers reflected over a decade's worth of committed service. The survey findings demonstrated that approximately two-fifths of those polled had familiarity with how their organisation handles billing procedures. However, some respondents rated 4 points as lacking in their field, possibly due to a lack of experience, education, or technology. The programming language was used in 74.3 percent of the total survey, with 11.45 percent using it extensively. The reasons for programming use in the billing process were improving billing accuracy, customising billing reports, automating calculations, handling complex scenarios, and integrating billing with other systems. However, many respondents were uncertain about the challenges or difficulties faced when implementing programming in the billing process. Some found cost savings after introducing programming, while others found no impact. Through leveraging both their extensive experience and cutting-edge technological solutions, these challenges were successfully surmounted. Many organisations noticed cost savings after introducing programming, but some companies found no impact. Basic training about programming in the billing process was provided by many organizations, but 11.4% of companies did not provide it. Out of 35 respondents, 13 were more satisfied with the programming in the billing process.

Dr.S. Muthulekshmi , Dharun S, Kiruthik Vigas D, Vinoth K, Visva.G.S, Harsha Adithya .S, Wasim Arshad.M.R

process, while 12 needed improvements. Most respondents wanted to improve faster billing processing time by optimising programming, and they needed more accurate billing calculations and enhanced billing reporting capabilities. While Python had become quite the popular pick amongst numerous firms for its broad application, many organisations found themselves most drawn to its widespread adoption as their programming language of choice.

Suggestion:

A crucial company activity that necessitates ongoing learning and improvement is the billing process. Organisations should establish targeted employee training programmes that concentrate on both programming abilities and billing domain knowledge in order to improve the billing process. Both programming abilities and knowledge of the billing industry should be covered in this training. Employees should promote a culture of continuous learning and professional growth by increasing opportunities for experience with programming languages for billing. Open lines of communication and mentoring programmes can help close the experience gap. Exploring automation possibilities and keeping up with technological developments can both help to simplify the billing process. Opportunities for cross-training can promote a deeper comprehension of the billing process. Processes that have been customised and integrated often function more effectively. Addressing issues and comparing results to industry standards, encouraging experimentation, and conducting regular assessments can improve the billing process.

Conclusion:

The study reveals that the majority of people, especially those between the ages of 18 and 25, are actively using software solutions, offering insightful information on the use of software in billing procedures. The necessity for easily available training programmes is highlighted by the fact that the majority of respondents have only mild work experience. The survey also shows how commonplace billing processes are within organisations, but it also emphasises the necessity for ongoing education and skill development. The growing prevalence of programming language

integration in billing procedures shows the possibilities for automation and customization. For billing processes to be optimised, difficulties must be addressed through focused training programmes, mentorship programmes, and a culture of continuous learning.

Scope for Future Study:

Different age groups have an impact on the billing process, with older professionals more likely to be older than younger professionals. The adoption of new technologies and programming languages in the billing industry may be impacted by this age distribution. The relationship between age groups and the availability of training programmes, as well as the trends in technological adoption by age, can be analysed through research. The career path in the billing industry can also be examined, taking into account elements like age-based promotions, job roles, and responsibilities. The ability to use programming for billing might also be influenced by other factors, such as experience versus education in the field. Learning curves, resource accessibility, and organisational support are all obstacles for older workers.

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