Skill In University And Industry

Sumathi Kesavan
dept. Computer Science (Software Engineering)
SX212327ECJHF03

Muhammad Aizat Bin AB Rashid
dept. Computer Science (Software Engineering)
SX220320ECJHS03

Muhammad Farhan Bin Mohd Izhar
dept. Computer Science (Software Engineering)
SX212313ECJHF03

Zaidi Bin Ahmad
dept. Computer Science (Software Engineering)
SX222136ECJHF03

Muhammad Syafiq Bin Mohd Zafri
dept. Computer Science (Software Engineering)
SX211667ECJHF03

I. ABSTRACT

This report examines the essential skills required for success in the field of information technology (IT) and the strategies necessary for preparing for entrepreneurial ventures in the IT industry. It provides an in-depth analysis of technical, management, and emerging skills, such as blockchain and artificial intelligence (AI), that are critical for future success. Additionally, the report delves into key aspects of job hunting, including common pitfalls, application processes, and the transition from employment to entrepreneurship. Reflections from an industry talk provide personal insights and actionable recommendations for academic and professional development**.**

II. INTRODUCTION

The information technology (IT) industry is characterized by rapid advancements and a dynamic landscape that demands a diverse range of competencies. Success in this field necessitates not only technical proficiency but also effective management and communication skills. Moreover, emerging technologies such as blockchain and artificial intelligence are reshaping the industry, underscoring the need for continuous learning and adaptability. This report consolidates insights from an industry talk on the skills required in both academic and professional contexts, with a particular focus on preparing for entrepreneurial opportunities in IT.

III. SKILLS NEEDED TO SUCCEED IN THE IT FIELD

A. Technical Skills

- There are several technical skills that contribute to success in the IT field, including proficiency in programming languages such as C, C++, Python, Java, and PHP; expertise in version control systems like GitHub and GitLab; familiarity with development tools such as Visual Studio, VSCode, and Sublime; strong knowledge of database management; debugging techniques; security practices (e.g., SQL Injection, XSS, CSRF); analytical problem-solving skills; and experience with system frameworks like .NET, Laravel, and Yii..

Figure 1 Tech Skill

B. Management Skills

Nowadays, management skills are essential for creating more efficient and organized systems and it creates the biggest employment opportunities. Firstly, Problem-Solving Abilities is its Effective planning and analysis to address business challenges and devise optimal solutions. Communication Skills are the most major area between stakeholders, developers, and end-users to ensure alignment and clarity. Furthermore, the Leadership and Team Collaboration Coordinating efforts across teams to achieve project goals and foster a collaborative environment. Another main part of industry Risk Management it is solve Anticipating potential issues and devising strategies to mitigate them during the design and implementation phases. Testing and Quality Assurance is the Validating system performance to ensure reliability and functionality. Documentation and Reporting is helping to Producing comprehensive documentation to maintain alignment and facilitate knowledge sharing throughout the project lifecycle

C. Additional Skills for the Future

Emerging technologies are reshaping the IT landscape, making the following skills increasingly important. First is the Blockchain Expertise it helps developer to Understanding

decentralized systems, smart contracts, and their applications in various industries.

Figure 2 Soft Skill

IV. Preparing for Entrepreneurship in IT

Entrepreneurs in the IT sector need to possess both technical expertise and the ability to manage a business. This section outlines the key elements involved in preparing for entrepreneurship in IT, including necessary skills, potential challenges, and key decisions to make when starting a business.

A. 3 big decision

- **What**: Preparing for entrepreneurship in IT involves gaining the necessary technical skills, business knowledge, and leadership capabilities to establish and run a successful IT-based business. This includes identifying market opportunities, developing innovative tech solutions, and managing business operations effectively.
- **Where**: This preparation can take place through formal education (universities, coding bootcamps, or business schools), online platforms (like Coursera, Udemy, or LinkedIn Learning), or practical experience in the IT industry. Networking events, accelerators, and incubators also provide valuable resources and connections.
- **Who**: Aspiring IT entrepreneurs, software developers, data analysts, product managers, or anyone with a passion for technology and a vision to solve problems through IT innovations. These individuals typically combine technical expertise with a strong entrepreneurial mindset.

B. Job Hunting

"Define your own success, Don't follow other people,s dreams. It's you vs yourself" [1]

1) Mistake in Job Hunting
a) Constraining Yourself from Exploring

Lack of exploration can cause you to miss out on opportunities where your potential could thrive or where growth prospects are better.

Solution: Research various industries, attend career fairs, and network with professionals in diverse fields. Keep an open mind and consider roles that align with your transferable skills, even if they aren't in your initial area of interest.

b) Applying for Jobs Only After Completing Studies

This delay might cause a gap in your resume and lead to missing out on campus recruitment drives and internships, which are often stepping stones to full-time positions.

Solution: Start your job search early, even while studying. Apply for internships, part-time roles, or freelance opportunities to build work experience. Utilize campus placement programs and networking events to secure opportunities before graduation.

c) Not Joining a Lot of Activities

Employers often value candidates with teamwork, leadership, and problem-solving experiences, which are typically honed through activities outside the classroom. A lack of these experiences can make your resume appear one-dimensional.

Solution: Engage in clubs, sports, hackathons, or community service. Such activities enhance your interpersonal skills, demonstrate initiative, and show that you're a versatile candidate.

C. Job Application Flow

1) Step 1: Identify

- **Know their strengths:** Identify their skills, talents, and areas of expertise.
- **Spot their weaknesses:** Acknowledge their limitations to identify areas for improvement.
- **Determine their interests:** Research different industries and the types of jobs available, considering their interests and values.
- **Define their motivations:** Clearly articulate their reasons for seeking employment, whether it's financial stability, personal growth, or a specific career path.
- **Visualize their long-term goals:** Envision their career trajectory and choose roles that align with their long-term aspirations.
- **Assess the relevance of the job to their background:** Evaluate how their education, experience, and skills align with the job requirements.
- **Identify required skills and qualifications:** Research the specific skills and qualifications required for the desired job roles.
- **Determine their driving force:** Clarify whether they are primarily motivated by financial gain or by building a fulfilling career.

2) *Step 2: Research*
- **Sustainability of the job & industry:** Analyses the long-term prospects of the job and industry.
- **Career growth & progression:** Research the company's track record for employee development and promotion opportunities.
- **Financial stability of the company:** Evaluate the company's financial health and stability.
- **Company culture & environment:** Research the company's culture and work environment to ensure it aligns with their values and preferences.
- **Company size:** Consider the advantages and disadvantages of working for a small or large company.
- **Company overview:** Conduct in-depth research on the company's history, mission, values, and recent news.
- **Market competitiveness:** Understand the competitive landscape of the industry and the company's position within it.
- **Available opportunities:** Research current job openings and their requirements.

3) *Step 3: Prepare*
- **Portfolio:** Develop a professional portfolio that showcases their skills and accomplishments through past projects, deliverables, or design samples.
- **Cover Letter:** Write a tailored cover letter for each application, highlighting relevant skills and experience and demonstrating their enthusiasm for the company and the role.

4) *Step 4: Apply*
- **Job Portals:** Submit applications through online job boards and company websites.
- **Email:** Send applications directly to hiring managers or recruiters via email.

D. Business Application Flow
- **Identify**: To establish a successful business foundation, clearly describe the product or service being offered, determine the target market and its demand, and assess the founding team's resources and skill set.
- **Research**: To determine the target markets size, comprehend consumer demands and preferences, and create accurate financial projections including initial expenditures and revenue estimates conduct market research.
- **Prepare:** Get ready by creating and testing the product or service to satisfy consumer wants, making sure that all legal and regulatory requirements are met, obtaining capital through a variety of sources, and creating a thorough marketing and sales plan to efficiently reach target clients.
- **Apply:** Introduce the product or service to the market through appropriate channels, keep an eye on consumer feedback and market trends, and modify the company plan and tactics in response to these findings.

REFLECTION

a) Sumathi Kesavan

My comprehension of the fundamental abilities needed in the IT industry has improved as a result of this document. I came to see that having technical capabilities is not enough; having strong management and communication skills is just as crucial for career success. I intend to concentrate on improving both my technical and soft skills.

b) Zaidi Bin Ahmad

Entrepreneurial insights I found particularly interesting was the section about getting ready to start my own business. It emphasized how crucial it is to have both business savvy and technical ability. I will look for resources and guidance to further prepare myself for this road because I am motivated to investigate opportunities in tech entrepreneurship.

c) Muhammad Aizat Bin AB Rashid

The information on job hunting was quite instructive. I liked how it was stressed that being involved in extracurricular activities and beginning the job search early would help you develop a well-rounded profile. I'll actively join more clubs going future and look for internships to improve my employability.

d) Muhammad Farhan Bin Mohd Izhar

I related to the documents emphasis on ongoing education and flexibility. I understand that keeping up with new developments like block chain and artificial intelligence is essential given how quickly technology is developing. I plan to take online classes to maintain my skills competitive and relevant in the labor market.

e) Muhammad Syafiq Bin Mohd Zafri

As I think back on the teamwork that went into this report, I see how important teamwork is in both academic and professional contexts. Our grasp of the topic was enhanced by the variety of viewpoints that our group was able to express. Since collaborative partnerships result in more creative solutions, I hope to cultivate them in future initiatives.

Their dedication to our academic and professional development is much appreciated.
Additionally, we would like to express our gratitude to the members of our group for their hard work and collaboration, which were essential to the completion of this study. Each person's unique perspectives and efforts have improved our understanding.

REFERENCES

[1] En Mohd Hakimi Iqmall (Pegawai Teknologi Maklumat UTM Digital) , and En Nik Mohd Habibullah (Ketua Pegawai eksekutif Micro Semiconductor Sdn Bhd), "Designing success from graphic multimedia to leading projects and Preparing for Entreprenuership" UTM Johor Bharu, December 2024.