



**Pre-feasibility Study**

# **POLYTECHNIC IT TRAINING INSTITUTE**

**December 2022**

*“The figures and financial projections are approximate due to fluctuations in exchange rates, energy costs, and fuel prices etc. Users are advised to focus on understanding essential elements such as production processes and capacities, space, machinery, human resources, and raw material etc. requirements. Project investment, operating costs, and revenues can change daily. For accurate financial calculations, utilize financial calculators on SMEDA’s website and consult financial experts to stay current with market conditions.”*

**Small and Medium Enterprises Development Authority**  
Ministry of Industries and Production  
Government of Pakistan

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## 1 DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the said matter. Although, the material included in this document is based on data / information gathered from various reliable sources; however, it is based upon certain assumptions, which may differ from case to case. The information has been provided on, as is where is basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been taken to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice to be obtained by the user. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision, including taking professional advice from a qualified consultant / technical expert before taking any decision to act upon the information.

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### **Document Control**

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## 2 EXECUTIVE SUMMARY

Information Technology or IT is the use of computers, networking and other physical devices, storage, infrastructure and processes to create, store, retrieve, exchange or process information and data. Information technology is a branch of computer science, which can be defined as the overall study of procedure, structure, and the processing of various types of data.

Information Technology is currently one of the fastest growing sectors in the world. Almost every field, industry or sector around the globe is dependent on IT sector. This reliance on IT has resulted in demand of IT expertise in all sectors of the economy which has led to a sharp increase in demand for trained IT professionals, which in turn has created a demand for training service providers and institutes.

The proposed IT training institute provides training on 3-6 months' short courses and 1 year diploma certificate courses. Due to nature and duration of these courses, the institute can be categorized as "Polytechnic IT Training Institute".<sup>1</sup> Due to complex and intricate nature of these courses and students' preference for one-on-one physical interaction with the instructors, the IT courses in the proposed institute are assumed to teach only physically, with no provision for no online courses.

The training institute will provide training on 29 different types of IT courses. These include six 1-year diploma courses, ten 6-months courses and thirteen 3-months courses. Daily teaching session for each course is of 2-hours duration, with classes held 3 days a week.

The demand of IT training institutes is high in larger cities like Karachi, Lahore, Islamabad, Peshawar Quetta, Hyderabad, Rawalpindi, Multan, Faisalabad, Sialkot, Gujranwala, Sukkur, Bahawalpur, etc. This is because of presence of large number of public institutions and private businesses in these cities which need the services of IT experts. In addition to larger cities, these institutes can also be developed in smaller cities like Sheikhpura, Gujrat, Sahiwal, Okara, Muzaffarabad, Attock, Kohat, Mianwali, Mardan, Larkana, Gilgit, Bahawalnagar, Skardu, Lasbela, etc. due to increasing use of IT and rising trend of freelancing.<sup>2</sup>

The potential target market for polytechnic IT training institute comprises of entrepreneurs, students and freelancers. According to Securities and Exchange Commission of Pakistan (SECP), 26,502 new companies were registered in FY 2021-22, raising the total number of registered companies to 172,206. Of the 26,502 newly registered companies, 3,760 companies belonged to IT sector which shows an increasing demand for IT graduates and professionals. Pakistan currently ranks fourth in terms of the largest number of freelancers in the world.<sup>3</sup> According to the report

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<sup>1</sup> Polytechnic is an institute where different courses are offered at certificate or degree level on vocational subjects.

<sup>2</sup> <https://www.arabnews.pk/node/2113396/pakistan>

<sup>3</sup> <https://techabu.co/freelancing/top-10-countries-with-most-freelancers/>

issued by Pakistan Software Export Board, the number of freelancers in Pakistan brought in revenue of \$150 million in 2019-2020.

This pre-feasibility document provides details for setting up a “Polytechnic IT Training Institute”. The proposed institute has a total annual service capacity of training 3,030 students per year which include 1,680 students for 3-month courses, 750 students for 6-month courses and 600 students for 1-year diploma courses. The institute is assumed to operate for 10 hours a day for 300 days per year. The starting capacity utilization in the first year of operations is assumed to be 50%, while maximum capacity utilization is assumed to be 90% in year 9.

The proposed project will be set up in a rented building having an area of 11,040 sq. feet (49.07 Marla). The proposed project has a total investment of PKR 32.22 million. This includes capital investment of PKR 29.92 million and working capital of PKR 2.30 million. This project is financed through 100% equity. The Net Present Value (NPV) of project is PKR 68.80 million with an Internal Rate of Return (IRR) of 54% and a Payback period of 3.03 years. Further, the proposed project is expected to generate Gross Annual Revenues of PKR 62.72 million in 1st year after coming into operations, Gross Profit (GP) ratio ranging from of 41% to 71% and Net Profit (NP) ratio ranging from 1% to 37% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 48% with breakeven revenue of PKR 60.28 million.

The proposed project may also be established using leveraged financing. At 50% financing at a cost of KIBOR+3%, the proposed institute provides Net Present Value (NPV) of PKR 84.97 million, Internal Rate of Return (IRR) of 53% and Payback period of 3.07 years. Further, this project is expected to generate Net Profit (NP) ratio ranging from 1% to 37% during the projection period of ten years. The proposed project will achieve its estimated breakeven point at capacity of 48% with breakeven revenue of PKR 60.69 million.

The proposed project will generate employment opportunities for 37 people. As evident from the above financial figures, the proposed project for “Polytechnic IT Training Institute” shows reasonable profitability and is economically and financially viable. The legal form of the proposed business will be a “Private Company” due to the corporate and regulatory requirements of Pakistan. Moreover, the business will have to incur multiple banking transactions of huge amount, with local and foreign clients.

### 3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number,



scale and competitiveness of SMEs", SMEDA has carried out 'sectorial research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives. Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need-based capacity building programs of different types in addition to business guidance through help desk services.

National Business Development Program for SMEs (NBDP) is a project of SMEDA, funded through Public Sector Development Program of Government of Pakistan.

The NBDP envisages provision of handholding support / business development services to SMEs to promote business startup, improvement of efficiencies in existing SME value chains to make them globally competitive and provide conducive business environment through evidence-based policy-assistance to the Government of Pakistan. The Project is objectively designed to support SMEDA's capacity of providing an effective handholding to SMEs. The proposed program is aimed at facilitating around 314,000 SME beneficiaries over a period of five years.

## **4 PURPOSE OF THE DOCUMENT**

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document/study covers various aspects of project concept development, start-up, and production, marketing, finance and business management.

The purpose of this document is to provide information to the potential investors about establishing a "Polytechnic IT Training Institute" The document provides a general understanding of the business to facilitate potential investors in crucial and effective investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form the basis of any investment decision.

## 5 BRIEF DESCRIPTION OF PROJECT & SERVICES

Information technology (IT) is the use of computers, storage, networking and other physical devices, infrastructure and processes to create, process, store and exchange and process information and data. Information technology is a branch of computer science, which can be defined as the overall study of procedure, structure, and the processing of various types of data. Generally, IT is used in the context of business operations, as opposed to technology used for personal or entertainment purposes. However, the commercial use of IT encompasses both computer technology and telecommunications. This proposed institute will provide training services on IT related subjects and courses.

In today's modern world, both public and private sector organizations need professionals who can manage and understand the essential workings of IT systems and provide internal and external support for carrying out the routine operations. Such a situation leads to an increase in demand for IT professionals who are skilled and committed to learning and adapting to new advancements in this rapidly changing sector. This increased demand for IT professionals has subsequently led to increasing demand for IT training institutes manifold over the last few years. There is also a tendency in the market to acquire professional skills in shorter periods rather than spending many years to obtain formal education.

Typically, IT training institutes provide training services for short courses for which the training period ranges from 3 to 6 months. Short course is a learning program that primarily covers the practical side of a course over a shorter period, when compared with that of degree or diploma courses. 3-month courses usually cover the basic concepts, with some practical applications, whereas 6-month courses also cover some advanced details in addition to basic contents of the course. In addition to these short courses, the proposed training institute also offers on-campus, 1-year diploma courses. Diploma is a short-term course with duration ranging from 1 to 2 years, focused on training the students in a particular field. 3-month and 6-month courses are generally preferred by students who are keen on online earning whereas 1-year diploma courses are preferred by students that prefer to go for more of a practical job experience.

The courses to be taught at the proposed polytechnic IT training institute are listed below:

### **1-Year Diploma Courses**

- Software Engineering
- Advance Web Technology
- Graphic and Web Designing
- Network and Cyber Security
- Digital Media Marketing
- Data Science

### **6-Month Courses**

- JavaScript Full Stack
- Oracle
- Python
- React
- PHP (My SQL Included)
- SQL Database Administrator
- NFT
- Block Chain
- Devops
- Full Stack Web Developer

### **3-Month Courses**

- AWS
- Ruby on Rails
- Graphic Designing
- Web Designing & Developer
- C/C++
- HTML
- C#.NET
- Microsoft Certified Azure
- Microsoft Office
- Data Science Basic
- IOS & SWIFT
- Laravel
- Flutter

These courses have been selected on the basis of market demand and assessment of secondary research conducted by Pakistan Software Houses Association (P@SHA) for IT & ITES in 2022.<sup>4</sup> All courses will be taught 3 days a week, with training sessions conducted for 2 hours a day in each class. The instructors/teachers, having minimum 3 to 5 years of teaching experience along with degree in computer science, software engineering, information technology or any related professional degree will be hired by the proposed institute.

The field of information technology although is a very broad field however it is also interconnected meaning majority of the programs or languages in the field of IT are interoperable therefore an IT specialist teacher has to have a grip on majority of these interoperable programs and languages to teach these programs effectively. Hence it is very common in such institutes for a teacher to teach on average 3 subjects. The

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<sup>4</sup><https://www.pasha.org.pk/pashapk/The-Great-Divide-Industry-Academia-Skills-Gap-Analysis-Report-2022.pdf>

proposed Polytechnic IT training will hire a team of 10 IT specialist teachers to teach these courses.

### **Description of Courses**

Details of information on the above courses are provided in the following paragraphs:

#### **1-Year Diploma Courses**

##### ***Software Engineering Diploma***

Software engineering, according to IEEE's definition, is defined as the application of a systematic, disciplined, quantifiable approach to development, operation and maintenance of the software, and study of different approaches.

Software engineering includes many fields that cover the process of engineering software and certification, including requirements gathering, software design, software construction, software maintenance, software configuration management, software engineering management, software development process management and creation, software engineering models and methods, software quality, software engineering professional practices as well as foundational computing and mathematical and engineering study.

The contents of this course include introduction of software engineering, discussion of key methodologies of software engineering, software development life cycle, software modelling using unified modelling language and a standardized general purpose modelling language used to create visual models of object-oriented software.<sup>5</sup>

##### ***Advance Web Technology***

Web technologies that include advanced multimedia features, object-oriented programming functions and interactive application communications are called advanced web technologies. These technologies are increasingly used and are gaining importance for the development of interactive web applications. For developing websites with aforementioned characteristics, number of platforms/advance web technologies/programs are used by the IT professionals.

The proposed training institute will provide training in advance web technologies, including 8HTML, CSS, Full Stack web development bootstrap, JavaScript, jQuery, jQueM, JSON, DOM, AJAX, PHP & MySQL, MVC with Laravel, ReactJS, JSX, Routing, Angular, NodeJS, ExpressJS, Express advanced, MongoDB, Tailwind CSS, Python, Python Libraries, Django, Ruby on Rails programming basics and framework, Ruby object-oriented programming, Scaffolding, Controllers, Apache Servers, Webpack's, Google Tag Manager.

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<sup>5</sup> Software engineering diploma is different from Software engineering degree as it focuses on teaching core principles of only software engineering and does not include other subjects such as marketing, management, economics etc. taught in software engineering degree.

## **Graphic and Web Designing**

Graphic Designing is the practice of producing visual content to relay a specific message. Graphic design can be used as a way to artistically express ideas and thoughts, or it can be used in a more commercial way to visually communicate messages and ideas using graphical and textual elements. Graphic design helps communicate with the audience, conveying the meaning and message of a product, campaign, project, or event.

Web design is the art of planning, conceptualizing, and arranging content and elements to access and share online. This deals with the overall functionality of how the website works and includes the design of the user interface on web and mobile apps. Web design handles the look and feel of a website, telling a story to enhance the user experience. It also focuses on the functionality of a website by taking on tasks like testing websites, optimizing websites, and ensuring that the websites run smoothly and efficiently.

Training in graphic and web designing involves gaining an understanding of software such as Adobe Illustrator, Coral draw, Adobe Photoshop, Adobe XD, Adobe InDesign, HTML, CSS, Bootstrap, In-page, Adobe Dimension & Photoshop, Advance UI UX, WordPress + SMM, Digital painting, Photography, Visual merchandizing, AutoCAD, 3D Studio max etc.

## **Network and Cyber Security**

Network security relates to the measures taken by an organization to secure its computer network and data using both hardware and software systems. This aims at securing the confidentiality and accessibility of the data and network.

Cyber security relates to the measures required to protect a system from cyber-attacks and any unauthorized entry into the system. It aims at improving the security of the system to prevent unauthorized access to system from any potential attacker.

Training of network and cyber security involves acquiring understanding of web basics and authenticity security, web application common vulnerabilities and mitigations., proactive defense and operation security, Ajax and web services security. Programs such as Cutting-edge Web Security, Data validation, Validation concerns, Authentication and session management, Client certificates, Access control bypass, secure development cycle, Integration code review into SDLC and Network administration are also part of this course.

## **Digital Media Marketing**

Digital marketing, also called online marketing, is the promotion of products to connect with potential customers using internet and other forms of digital communication. This marketing includes not only email, social media, and web-based advertising, but also text and multimedia messages.

Training in digital media covers social media marketing, Search Engine Optimization, Email marketing, Google & Facebook marketing, YouTube marketing and Content marketing.

### **Data Science**

Data Science is the domain of study that deals with vast volumes of data using modern tools and techniques to find patterns, derive meaningful information, and make business decisions. Data science uses complex machine learning algorithms to build predictive models. Data science is a concept to unify statistics, data analysis, informatics and their related methods in order to understand and analyze actual phenomena with data.

The accelerating volume of data sources, and subsequently data, has made data science one of the fastest growing fields across every industry. As a result, it is no surprise that in 2012 the role of the data scientist was declared as the most demanded job of the 21<sup>st</sup> century by Harvard Business Review. Organizations are increasingly reliant on Data Science experts to interpret data and provide actionable recommendations to improve business outcomes.<sup>6</sup>

### **6-Month Courses**

#### **JavaScript Full Stack**

Java is a programming language and computing platform first released by Sun. Java is a widely used object-oriented programming language and software platform that runs on billions of devices, including notebook computers, mobile devices, gaming consoles, medical devices and many others. JavaScript is a lightweight programming language scripting language and is used to make web pages interactive. Full stack JavaScript development involves learning both client and server software.

#### **Oracle**

Oracle Software, Systems, and on-premises applications are designed to solve the most challenging business needs of organizations of all sizes and industries. Oracle makes software, called Database Management Systems (DBMS), to create and manage databases. Oracle tools often allow users access to the database without using SQL directly, but these applications in turn must use SQL when executing the user's request. Oracle was originally written in Fortran and then rewritten in C language.

Oracle Database is the first database designed for enterprise grid computing, the most flexible and cost-effective way to manage information and applications. A database management system is used for storing data and providing high performance, authorized access, and failure recovery features. Oracle is one of the largest vendors in the enterprise IT market and the shorthand name of its flagship product, a relational database management system (RDBMS) that's formally called Oracle Database.

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<sup>6</sup> <https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>

## **Python**

Python is a computer programming language used to build websites and software, automate tasks and conduct data analysis. Python is a general-purpose language that can be used to create a variety of different programs and is not specialized for any specific problems. This versatility, along with its beginner-friendliness, has made it one of the most-used programming languages.

Python is also used to develop the back end of a website or application, the parts that a user does not see. Python's role in web development can include sending data to and from servers, processing data and communicating with databases, URL routing, and ensuring security. Python offers several frameworks for web development. Commonly used ones include Django and Flask.

## **React**

React is a declarative, efficient and flexible frontend JavaScript library which is used for designing user-interface specifically for Single Page Applications. It is an open-source component-based view library which is responsible for developing the view layer of web and mobile apps.

With the help of react web-based applications, native mobile applications for both Android and iOS and desktop application can be developed.

## **Hypertext Preprocessor (PHP)**

PHP is a widely-used open-source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.<sup>7</sup> It is used to make static or dynamics websites or web applications. It is also a general-purpose language that is used to make various projects, including Graphical User Interfaces (GUIs).

PHP is cross platform language which means that it can be deployed on a number of different operating systems such as Windows, Linux, Mac OS, etc. PHP has in-built support for working hand in hand with MySQL and can also be used with other data management systems such as Postgres, Oracle, MS SQL server, ODBC etc.

## **Structured Query Language (SQL)**

SQL stands for Structured Query Language. It is a database computer language designed for the retrieval and management of data in a relational database.<sup>8</sup> All the relational database management systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL server use SQL as their standard database language.

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<sup>7</sup> A scripting language is a language that interprets scripts at runtime. Scripts are usually embedded into other software environments.

<sup>8</sup> A relational database is a type of database that stores and provides access to data points that are related to one another.



**Non-Fungible Token (NFT)**

Non-Fungible Token is a unique digital identifier that cannot be copied, substituted, or subdivided, that is recorded in a block chain and that is used to certify authenticity and ownership (as of a specific digital asset and specific rights relating to it). NFTs can really be anything digital (such as drawings, music, human brain downloaded and turned into an AI), but a lot of the current excitement is around using the tech to sell digital art.

**Block Chain**

Block chain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible or intangible. Virtually anything of value can be tracked and traded on a block chain network, reducing risk and cutting costs for all involved.

Block chain is ideal for delivering information because it provides immediate, shared and completely transparent information stored on an immutable ledger that can be accessed only by permissioned network members. A Block chain network can track orders, payments, accounts, production and much more.

**DevOps**

DevOps is a combination of software developers (dev) and operations (ops). It is defined as a software engineering methodology which aims to integrate the work of software development and software operations teams by facilitating a culture of collaboration and shared responsibility.

**Full Stack Web Developer**

Full Stack Web Development refers to development of both front end (client side) and back end (server side) portions of web application. Full Stack Web Developers have the ability to design complete web applications and websites. These developers work on the frontend, backend, database and debugging of web applications or websites.

**3-Month Courses****AWS Associate**

Amazon Web Services (AWS) is an online platform that provides scalable and cost-effective cloud computing solutions. AWS is a broadly adopted cloud platform that offers several on-demand operations like compute power, database storage, content delivery, etc., to help corporates scale and grow.

AWS provides a user-friendly programming model, architecture, database as well as operating system. It is used for services such as billing and management for the centralized sector, hybrid computing, and fast installation or removal of application. The most common applications of AWS are storage and backup, websites, gaming, mobile, web, and social media applications.



## **Ruby on Rails**

Ruby on Rails (or "Rails") is an open-source web application development framework written in the Ruby programming language. It is a web-application framework that includes everything needed to create database-backed web applications according to the Model-View-Controller (MVC) pattern.<sup>9</sup>

Rails is used for many types of web apps. It can be used to build complete web applications that span both the front end and the back end. Some of the uses of this application include rendering HTML templates, updating databases, sending and receiving emails, maintaining live pages via WebSocket, enqueueing jobs for asynchronous work, storing uploads in the cloud and providing solid security protections for common attacks.

## **C/C++**

C is a powerful general-purpose programming language. It can be used to develop software like operating systems, databases, compilers, etc. C language is considered as the mother language of all the modern programming languages because most of the compilers, JVMs, Kernels, etc. are written in C language, and most of the programming languages follow C syntax.

C++ or "C-plus-plus" is a general-purpose programming and coding language. It is used in developing browsers, operating systems, and applications, as well as in-game programming, software engineering, data structures, etc. Almost all the programs and systems that are used today or a part of their code base is written either in C or C++.

## **Hyper Text Markup Language (HTML)**

HTML stands for Hyper Text Markup Language. HTML has a lot of uses such as web development, internet navigation, web documentation. It is a standard markup language for web page creation. It allows creation and structure of sections, paragraphs, and links using HTML elements (the building blocks of a web page) such as tags and attributes. Being text-based, HTML tells the browser how to display all the various page elements like text, images and other multimedia, on an individual web page.

## **C# and .NET**

C# is a general-purpose, multi-paradigm programming language while .NET is a developer platform. Both are essential for application development. Without the .NET framework, the program cannot operate. .NET is growing rapidly over the years, becoming a prevalent programming language among many software developers and programmers. It is also being used by many different companies and governments across the world.

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<sup>9</sup> Model view controller (MVC) is a software architectural pattern commonly used for developing user interfaces that divide the related program logic into three interconnected elements.

**Microsoft Certified Azure**

Microsoft Azure is a cloud computing service operated by Microsoft for application management via Microsoft-managed data centers. It provides Software as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) and supports many different programming languages, tools, and frameworks, including both Microsoft-specific and third-party software and systems.

**Microsoft Office**

Microsoft Office is a suite of programs and applications such as Excel, Word, PowerPoint, OneNote, Publisher and Access that are designed to help with productivity and completing common tasks on a computer. These are used to edit or create documents containing text, tables, figures and images, create presentations and posters and work with data in spreadsheets and databases. All these programs share common features, such as the command tabs, ribbon bar, screen tips, smart tags and help.

**Data Science Basic**

Data Science deals with a variety of data using latest techniques and tools to derive meaningful information, to find unseen patterns and to make business decisions. Data science is the field that primarily deals to discover answers for the areas that are unknown and unexpected and also focuses on finding actionable information in large, raw or structured data sets to identify patterns. Data science can be used to gain knowledge about behaviors and processes, write algorithms that process large amounts of information quickly and efficiently, increase security and privacy of sensitive data, and guide data-driven decision-making.

**iOS & SWIFT**

Swift is a powerful, general-purpose, compiled and multi-paradigm programming language developed by iOS and the open-source community.<sup>10</sup> Swift is the result of the latest research on programming languages, combined with decades of experience building iOS platforms. Swift makes it easier for developers to input and maintain correct programs. Swift is an alternative to the Objective-C language and during its introduction it was described as Objective-C language that employs modern programming-language theory concepts and strives to present a simpler syntax.

**Laravel**

Laravel is a free and open-source PHP web framework with elegant, expressive syntax. Laravel attempts to help in the development by easing common tasks that are used in most web projects, such as routing, authentication, caching and sessions. Laravel aims to make the development process easy and pleasing for the developer without sacrificing application functionality.

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<sup>10</sup> iOS is a mobile operating system created and developed by Apple Inc. exclusively for its hardware.

## **Flutter**

Flutter is used by developers and organizations around the world and is free and open-source UI software development kit created by Google. Flutter is a framework based on the Dart programming language.

Flutter framework is a latest and reactive framework and is used to develop cross platform applications for Android, iOS, Linux, MacOS, Windows, Google Fuchsia, and the web from a single codebase. It controls every pixel to create adaptive and customized designs that look eminent on any screen and build high quality apps. Flutter is used for crafting beautiful, natively compiled applications for mobile, web and desktop from a single codebase.

## **Equipment**

Brief description of the IT equipment required for the proposed institute is provided below.

### **Laptop and Desktop Computer**

Laptop or desktop computer facilitates students to meet at any location, be it a library, school's classroom or a student's home and access the materials they may need, including classroom notes, journal articles, online research or software for creating videos. Figure 1 shows laptop and desktop computer.

**Figure 1: Laptop Computer and Desktop Computer**



### **Microphones and Headphones**

Teachers need quality devices to deliver the lessons effectively in a classroom environment. Besides high-quality personal computers or laptops, teachers need high quality microphones to deliver clearly audible lectures. Figure 2 shows microphone and headphone.

**Figure 2: Microphone and Headphone**

## Projectors

A projector is an output device that receives images generated by a computer or Blu-ray player and reproduce them by projection onto a screen, wall, or another surface. In most cases, the surface projected onto is large, flat, and lightly colored. Projector helps instructors in projecting what functions they are performing on their computer to entire class instead of explaining it on traditional white board which reduces the efficiency.

**Figure 3: Projector**

## Digital Writing Pads

A digital writing pad is a book, computer device, or tablet that allows users to write and draw using a stylus, rendering the data digitally. The digital writing pad is used in the same way as pen and paper. However, it can be shared, stored, and utilized a lot easier this way. In some cases, the pad can be a book that saves the data digitally.

**Figure 4: Digital Writing Pads**

### 5.1 Installed and Operational Capacities

The proposed “Polytechnic IT Training Institute” has a maximum capacity of training 3,030 students which include 1,680 students for 3-month courses, 750 students for 6-month courses and 600 students for 1-year diploma courses. The proposed business will work in one shift of 10 hours for 300 days in a year. It is assumed that it will attain a capacity utilization of 50% (1,515 students) during the first year of operations which translates into training 840 students for 3-month courses, 375 students for 6-month courses and 300 students for 1-year diploma courses. It is projected that, during the period of 10 years, it shall continue to serve with 5% annual increase in capacity each year and to reach the highest capacity of 90% in the 9<sup>th</sup> year of operations

Table 1 shows details of maximum annual capacity and operational capacity for “Polytechnic IT Training Institute.

**Table 1: Polytechnic IT Training Institute Installed and Operational Capacity**

Courses	Total No. of Classes Conducted Per Year	Percentage Ratio	Allocation of Classes for Each Course	Total no of classes in each Batch	Total no of Batches Process	No. of Students Per Year	No. of Students @ 50%
<b>3 Month Courses</b>	7,200	30%	2,160	39	55		
AWS						60	30
Ruby on Rails						60	30
Graphic Designing						60	30
Web Designing & Developer						150	75
C/C++						60	30
HTML						180	90
C#.NET						180	90
Microsoft Certified Azure						180	90
Microsoft Office						180	90
Data Science Basic						180	90
IOS & SWIFT						180	90
Laravel						120	60
Flutter						90	45
<b>Subtotal</b>						<b>1680</b>	<b>840</b>

<b>6-Month Courses</b>						
JavaScript Full Stack					30	15
Oracle					90	45
Python					60	30
React					120	60
PHP (My SQL Included)					60	30
SQL Database Administrator					60	30
NFT					90	45
Block Chain					120	60
DevOps					90	45
Fullstack Web Developer					30	15
<b>Subtotal</b>					<b>750</b>	<b>375</b>
<b>1 Year Diploma</b>						
Software Engineering					60	30
Advance Web Technology					150	75
Graphic and Web Designing					60	30
Network and Cyber Security					90	45
Digital Media Marketing					120	60
Data Science					120	60

<b>Subtotal</b>		<b>600</b>	<b>300</b>
<b>Total</b>		<b>3,030</b>	<b>1,515</b>

Table 2 depicts capacity of classrooms.

**Table 2: Capacity of Classrooms**

<b>Courses</b>	<b>No. of Courses</b>	<b>Per Day Capacity of Classroom (Hours)- A</b>	<b>Total no of Classrooms- B</b>	<b>Total No of hours Available per year (A*B*No of Days)</b>	<b>Duration of One Class (Hours)</b>	<b>Total Number of Classes Conducted Per Year</b>
3-Month Courses	13	8	6	14,400	2	7,200
6-Month Courses	10					
1-Year Courses	6					

Table 3 shows total time calculation per batch.

**Table 3: Number of Classes Requirement for Different Courses**

<b>Courses</b>	<b>Duration of each class</b>	<b>Classes Per Week</b>	<b>Total Number of weeks Required for Each Batch</b>	<b>Total no of Hours per Batch (Hours)</b>	<b>Total Number of Classes per batch</b>
3-Month	2	3	13	78	39
6-Month	2	3	26	156	78
1-Year	2	3	48	288	144



## 6 CRITICAL FACTORS

The following factors should be taken into account while making the investment decision in “Polytechnic IT Training Institute”:

- Hiring of qualified personnel with proficient subject related skills
- Availability of latest and modern IT equipment (latest laptops/computer systems)
- Provision and installation of internet and computing facilities, with backup plans
- Sound background knowledge and professional qualification of the entrepreneur and the key staff
- Regular training and capacity building of the entrepreneur and key staff
- Maintaining good academic environment
- Strict checks on quality standards and rigorous supervision of the process at every level

## 7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The demand for IT training services is higher in large cities. Majority of private and public business are present in the large cities where technical education related to IT is in high demand. Therefore, the geographical potential for investment in this business is in larger cities like Karachi, Lahore, Islamabad, Peshawar, Quetta, Hyderabad, Rawalpindi, Multan, Faisalabad, Sialkot, Bahawalpur, Gilgit, Muzaffarabad, Gujranwala, Sukkur, Skardu or any other major city. In these cities, skilled and qualified staff for training is easily available.

The proposed business may also be established in other small cities like Sheikhpura, Gujrat, Sahiwal, Mardan, Okara, Kohat, Lasbela, Mianwali since these cities can be categorized as educational hubs of their respective districts with large no of students travelling daily from adjoining cities to study in such cities.

## 8 POTENTIAL TARGET CUSTOMERS / MARKETS

The proposed business will target young entrepreneurs, students and freelancers as these training courses will provide them an opportunity to develop the skillset required to compete in the local business environment.

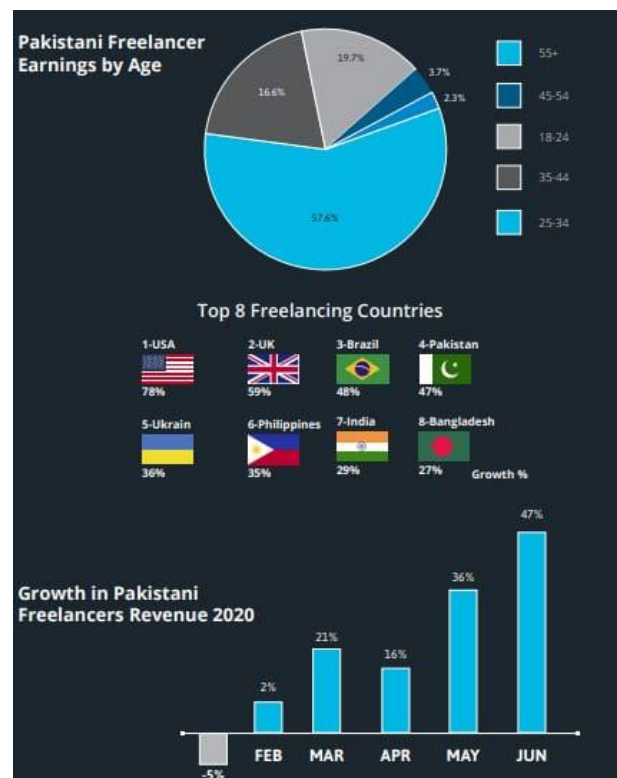
Another potential target market for Polytechnic IT institute is that of freelancers. Number of freelancers in Pakistan, engaged in online earning, has increased rapidly over the past few years. According to a report by Pakobserver, there are approximately 100,000 freelancers in Pakistan active on sites like Fiverr, Upwork, Guru, Toptal and Free up. The freelancing market is also expected to fetch \$5 billion remittances in

upcoming years.<sup>11</sup> A report published by International Labor Organization indicates that Pakistan now ranks number 3 in the world in terms of technical labor provided for online services.<sup>12</sup>

Pakistan Software Export Board (PSEB) has issued a detailed report reviewing the IT Industry and highlighting key facts and figures regarding its achievements. A section of the report titled “Freelancer, A Workforce in Acceleration” reveals that an exponential growth in the number of freelancers in Pakistan resulted in generating revenue of \$150 million in 2019-20.

In 2022, the IT sector made record exports of \$2.616 billion showing an increase of 24% from previous year exports of \$2.108 billion.<sup>13</sup> Figure 5 shows growth in Pakistan freelancers’ revenue for 2020.

**Figure 5: Growth in Pakistan Freelancers’ Revenue**



The reliance of modern economy on information technology has led to a rapid increase in need for professional IT specialists. To cater this need, a steady increase in IT training institutes is required and there has been a rapid increase in number of IT training institutes over the past 5-10 years. Although, due to undocumented nature of local economy, number of IT institutes or IT students is not available, however observations from the report published by PSEB regarding no of freelancers’ growth in Pakistan validates this increase in trend.

<sup>11</sup> <https://pakobserver.net/pakistans-freelancing-market-likely-to-fetch-5b-of-remittances-every-year/>

<sup>12</sup> <https://www.techjuice.pk/pakistan-is-now-the-worlds-third-largest-contributor-of-online-labor/>

<sup>13</sup> <https://www.techjuice.pk/it-industry-of-pakistan-is-exported-2-66-billion-in-2022/>

The local market for IT training institutes mainly consists of IT training academies that focus on providing short 3–6-month courses covering beginner to intermediate level of the respective courses. Along with these, there are large colleges and universities that focus on providing specialized IT professional degrees i.e., Associate degree program (2 years) or graduation (4 year). This leaves a market gap for 1-year diplomas that is targeted by the Polytechnic IT training institutes. There is a need to have institutes which provide both short 3-6 months courses as well as the longer 1-year diploma courses in different subjects of information technology. The proposed Polytechnic IT training institute will target the local market for 1-year diploma courses and short 3–6-month courses.

## 9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of the business of Polytechnic IT Institute. Various costs and revenue related assumptions, along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as annexure.

Project is proposed to be financed through 100% equity. Total project cost has been estimated to be PKR 32,215,712 comprising of capital investment of PKR 29,915,712 and working capital of PKR 2,300,000

### 9.1 Initial Project Cost Estimates

The details of initial project cost calculated for the Business Process Outsourcing is shown in Table 4.

**Table 4: Initial Project Cost**

Cost Item	Cost (PKR)	Details Reference
Land		
Building / Infrastructure	1,474,514	9.1.2
IT Equipments for Classes	6,104,000	9.1.3
Class Room Furniture	2,440,000	9.1.5
Furniture & fixtures	2,093,000	9.1.5
Office vehicles	1,988,000	9.1.6
Office equipment	7,004,000	9.1.4
General Equipment	3,492,500	9.1.3
Pre-operating costs	2,919,698	9.1.7
Advance Against Building Rent	2,400,000	0

<b>Total Capital Costs</b>	<b>29,915,712</b>	
<b>Working Capital</b>		
Upfront Building Rent	800,000	
Cash	1,500,000	
<b>Total Working Capital</b>	<b>2,300,000</b>	
<b>Total Investment (PKR)</b>	<b>32,215,712</b>	

### 9.1.1 Land

The proposed business 'Polytechnic IT Training Institute' will be established in a rented building to avoid the high cost of land. Suitable location for setting up an institute like this can be easily found on rent. Therefore, no land cost has been added to the project cost. Total space requirement for the proposed manufacturing unit has been estimated as 11,040 sq. feet. The required space breakup is shown in Table 5.

**Table 5: Land Area Breakup**

Description	% Break-Up	Number	Size	Area (Sq. Ft.)
Director/Principal Office	1%	1	150	150
Office Area (Admin & Accounts)	4%	1	400	400
Reception	1%	1	100	100
Staff Room (Male)	1%	1	150	150
Staff Room (Female)	1%	1	150	150
Classrooms	43%	6	800	4,800
Computer Lab	19%	2	1,050	2,100
Cafeteria	5%	1	600	600
Indoor Recreational Area	5%	1	600	600
Store	1%	1	150	150
Washrooms	6%	10	64	640
Parking	11%	1	1,200	1,200
<b>Total</b>	<b>100%</b>			<b>11,040</b>

### 9.1.2 Building

There will be no cost of construction of building since the proposed institute will be started in the rented building. However, there will be a renovation cost required to make the building ready to use for the business. The proposed polytechnic IT training institute requires an estimated electricity load of around 84 KW for which an electricity

connection under the Commercial Supply Tariff will be required. Cost of such electricity connection has not been included in the Project Cost, since electricity connection is generally available in the buildings, which are offered for rent. Building rent of PKR 800,000 per month has been included in the operating cost. Building renovation cost is shown in Table 6.

**Table 6: Renovation Cost Details**

Cost Item	Unit of Measurement	Total Units	Cost/Unit	Total Cost (PKR)
Paint Cost	Liter	195	800	156,144
Labour Cost-Paint	Square Feet	18,258	15	273,870
Glass partition	Square Feet	180	550	99,000
Blinds	Units	2	7,000	14,000
Curtains	Units	1	6,000	6,000
Wall Racks	Units	10	15,000	150,000
Ceramic Floor Tiles-12*12 inch	Square Feet	7,050	110	775,500
<b>Total (PKR)</b>				<b>1,474,514</b>

### 9.1.3 IT Equipment Requirement

Table 7 provides details of equipment and machinery required for the project.

**Table 7: Institute IT Equipment**

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Desktop Computer	100	50,000	5,000,000
Projectors	8	70,000	560,000
Projector Screens	8	15,000	120,000
Digital Writing Pads (for Teachers)	10	5,000	50,000
Microphone and Speaker Set	10	7,000	70,000
Laser Printers	4	52,000	208,000
Inkjet Printer	2	48,000	96,000
<b>Total</b>			<b>6,104,000</b>

**Table 8: General IT Equipment**

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Desktop Computers	6	50,000	300,000
Laptops	4	150,000	600,000
Laser Printer	5	51,000	255,000
CCTV Cameras (2 MP)	29	3,500	101,500
DVR	2	18,000	36,000
LED TV 32"	4	45,000	180,000
Wi-Fi Router	5	4,000	20,000
Generator 100 KVA	1	2,000,000	2,000,000
<b>Total</b>			<b>3,492,500</b>

#### 9.1.4 Office Equipment Requirement

Table 9 presents office equipment requirement for the proposed unit.

**Table 9: Office Equipment Requirement**

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Inverter AC (1.5 Ton)	39	160,000	6,240,000
Exhaust Fan	17	5,000	85,000
Ceiling Fan	33	9,000	297,000
Water Dispenser	4	34,000	136,000
Fire Extinguisher (2 kg)	6	6,000	36,000
Fire Alarm System	1	200,000	200,000
First Aid Box	2	5,000	10,000
<b>Total (PKR)</b>			<b>7,004,000</b>

### 9.1.5 Furniture and Fixture Requirement

Table 10 gives details of the furniture and fixture required for the project.

**Table 10: Furniture and Fixtures Requirement**

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
Executive Table	1	75,000	75,000
Executive Chairs	1	35,000	35,000
Reception Counter	1	45,000	45,000
Office Tables	10	35,000	350,000
Office Chairs	20	16,000	320,000
Staff Chairs	18	20,000	360,000
Visitor Chairs	15	15,000	225,000
Staff room tables	6	30,000	180,000
Plastic Chairs (For Cafeteria)	48	3,000	144,000
Plastic Table (For Cafeteria)	12	7,000	84,000
Sofa Set	5	55,000	275,000
<b>Total (PKR)</b>			<b>2,093,000</b>

**Table 11: Classroom Furniture**

Cost Item	Units	Unit Cost (PKR)	Total Cost (PKR)
White Boards	10	7,000	70,000
Wooden Lectern (Dais)	10	15,000	150,000
Chairs (Students)	240	4,000	960,000
Tables (Students)	120	8,000	960,000
Tables (Computer Lab)	60	5,000	300,000
<b>Total</b>			<b>2,440,000</b>

### 9.1.6 Vehicle Requirement

Details of vehicles required for the project is given in Table 12.

**Table 12: Vehicle Requirement**

Cost Item	Unit(s)	Unit Cost (PKR)	Registration fee	Total Cost (PKR)
Motorcycle	1	145,000	7,000	152,000
Suzuki Ravi	1	1,800,000	36,000	1,836,000
<b>Total (PKR)</b>	<b>8</b>			<b>1,988,000</b>

### 9.1.7 Pre-Operating Cost Requirement

Details of pre operating cost required for the project is given in Table 13.

**Table 13: Pre-Operating Cost Requirement**

Particulars	Unit Cost (PKR)	Total (PKR)
Administration expense	2,034,231	2,034,231
Utilities expense	285,468	285,468
Promotional expense	600,000	600,000
<b>Total</b>		<b>2,919,699</b>

### 9.1.8 Advance against Building Rent

Details of advance security against building rent for the project is given in Table 14.

**Table 14: Advance against Building Rent**

Cost Item	Months	Unit Cost (PKR)	Total Cost (PKR)
Advance Security	3	800,000	2,400,000
<b>Total Cost</b>			<b>2,400,000</b>

## 9.2 Financial Feasibility Analysis

The financial feasibility analysis provides the information regarding projected IRR, NPV and payback period of the study, which is shown in Table 15.

**Table 15: Financial Feasibility Analysis**

Description	Project
IRR	54%
NPV (PKR)	68,800,845
Payback Period (years)	3.03
Projection Years	10
Discount rate used for NPV	25%



### 9.3 Financial Feasibility Analysis with 50% Debt

The financial feasibility analysis provides the information regarding projected IRR, NPV and payback period of the study on the basis of Debt: Equity Model (50:50), which is shown in Table 16.

**Table 16: Financial Feasibility Analysis with 50% Debt**

Description	Project
IRR	53%
NPV (PKR)	84,968,662
Payback Period (years)	3.07
Projection Years	10
Discount rate used for NPV	22%

### 9.4 Breakeven Analysis

Table 17 shows calculation of break-even analysis.

**Table 17: Breakeven Analysis**

Description	Amount First Year (PKR)	Ratios
Sales (PKR)	62,715,000	100%
Variable Cost (PKR)	29,050,644	46%
Contribution (PKR)	33,664,356	54%
Fixed Cost (PKR)	32,357,984	52%
Contribution Margin	54%	
Breakeven Revenue (PKR)	60,281,294	
Breakeven (Units)	1,456	
Breakeven Capacity	48%	

## 9.5 Revenue Generation

Based on 50% capacity utilization, sales revenue during the first year of operations is shown in Table 18.

**Table 18: Revenue Generation**

Courses	Number of Students Per Year	Number of Students Per Year @ 50% Capacity	Fee for Each Course (PKR per Student)	Total Revenue @ 50%
<b>3-Month Courses</b>				
AWS	60	30	16,000	480,000
Ruby on Rails	60	30	15,000	450,000
Graphic Designing	60	30	15,000	450,000
Web Designing & Developer	150	75	16,000	1,200,000
C/C++	60	30	15,000	450,000
HTML	180	90	18,000	1,620,000
C#.NET	180	90	16,000	1,440,000
Microsoft Certified Azure	180	90	22,000	1,980,000
Microsoft Office	180	90	16,000	1,440,000
Data Science Basic	180	90	18,000	1,620,000
IOS & SWIFT	180	90	19,000	1,710,000
Laravel	120	60	16,000	960,000
Flutter	90	45	18,000	810,000
<b>Subtotal</b>	<b>1680</b>	<b>840</b>		<b>14,610,000</b>

<b>6-Month Courses</b>				
JavaScript Full Stack	30	15	56,000	840,000
Oracle	90	45	54,000	2,430,000
Python	60	30	56,000	1,680,000
React	120	60	40,000	2,400,000
PHP (My SQL Included)	60	30	55,000	1,650,000
SQL Database Administrator	60	30	55,000	1,650,000
NFT	90	45	50,000	2,250,000
Block Chain	120	60	40,000	2,400,000
Devops	90	45	40,000	1,800,000
Fullstack Web Developer	30	15	62,000	930,000
<b>Subtotal</b>	<b>750</b>	<b>375</b>		<b>18,030,000</b>
<b>1-Year Diploma</b>				
Software Engineering	60	30	100,000	3,000,000
Advance Web Technology	150	75	90,000	6,750,000
Graphic and Web Designing	60	30	95,000	2,850,000
Network and Cyber Security	90	45	95,000	4,275,000
Digital Media Marketing	120	60	100,000	6,000,000
Data Science	120	60	120,000	7,200,000
<b>Subtotal</b>	<b>600</b>	<b>300</b>		<b>30,075,000</b>
<b>Total</b>	<b>3,030</b>	<b>1,515</b>		<b>62,715,000</b>

## 9.6 Variable Cost Estimate

Variable costs of the project have been provided in Table 19.

**Table 19: Variable Cost Estimate**

Description of Costs	Amount (PKR)
Consumables Cost	280,000
Direct Electricity	1,640,069
Human Resource Cost	20,520,000
Fuel Cost-Generator	2,948,400
Equipment Maintenance – Cost	1,805,475
Communications expense (phone, fax, mail, internet, etc.)	537,000
Office vehicles running expense	245,700
Office expenses (stationery, entertainment, etc.)	1,074,000
<b>Total</b>	<b>29,050,644</b>

**Table 20: Direct Labor**

Post	No. of Employees	Monthly Salary (PKR)	Annual Salary (PKR)
Principal	1	150,000	1,800,000
IT Specialist Teachers	10	120,000	14,400,000
IT Supervisor	1	80,000	960,000
Lab Incharge	2	80,000	1,920,000
Student Counselor	2	60,000	1,440,000
<b>Total Direct Labor Cost</b>			<b>20,520,000</b>

**Table 21: Maintenance Cost**

Furniture and Equipment	Rate	Maintenance cost (PKR)
IT Equipment for Classes	15% of the equipment cost	915,600
Class Room Furniture		366,000
General Equipment		523,875
<b>Total</b>		<b>1,805,475</b>

## 9.7 Fixed Cost Estimate

Table 22 shows the estimated fixed cost of the project.

**Table 22: Fixed Cost Estimate**

Description of Costs	Amount (PKR)
Management Staff	10,740,000
Administration benefits expense	1,563,000
Building rental expense	9,600,000
Promotional expense	1,567,875
Indirect Electricity	2,605,578
Depreciation expense	5,343,046
Amortization of pre-operating costs	583,940
Bad debt expense	313,575
Annual Vehicle Maintenance	40,970
<b>Total</b>	<b>32,357,984</b>

**Table 23: Management Staff Salary**

Post	No.	Monthly Salary (PKR)	Annual Salary (PKR)
Admin & HR Manager	1	100,000	1,200,000
Accounts Manager	1	100,000	1,200,000
Accounts Officer	2	60,000	1,440,000
Admin Officer	3	50,000	1,800,000
Marketing Officer	2	60,000	1,440,000
Receptionist	1	50,000	600,000
Driver	1	30,000	360,000
Office Boy	3	25,000	900,000
Sweepers	2	25,000	600,000
Security Guard	4	25,000	1,200,000
<b>Total</b>			<b>10,740,000</b>

**Table 24: Fixed Cost Assumptions**

Description of Costs	Details
Administration benefits expense	5.0% of administration expense
Promotional expense	2.5% of Revenue
<b>Depreciation expense</b>	
Building	10% of Cost
IT Equipment and Machinery	33% of Cost
Office equipment	15% of Cost
Furniture & fixtures	15% of Cost

## 9.8 Human Resource Requirement

For the 1<sup>st</sup> year of operations, the Polytechnic IT Training Institute shall require the workforce at a salary cost shown in Table 25.

**Table 25: Human Resource Requirement**

Post	No. of Employees	Monthly Salary (PKR)	Annual Salary (PKR)
Principal	1	150,000	1,800,000
Admin & HR Manager	1	100,000	1,200,000
Accounts Manager	1	100,000	1,200,000
Accounts Officer	2	60,000	1,440,000
Admin Officer	3	50,000	1,800,000
Marketing Officer	2	60,000	1,440,000
Receptionist	1	50,000	600,000
IT Specialist Teachers	10	120,000	14,400,000
IT Supervisor	1	80,000	960,000
Student Counselor	2	60,000	1,440,000
Lab Incharge	2	80,000	1,920,000
Driver	1	30,000	360,000
Office Boy	3	25,000	900,000
Sweepers	2	25,000	600,000

Security Guard	4	25,000	1,200,000
<b>Total</b>	<b>36</b>		<b>31,260,000</b>

## 10 CONTACT DETAILS

Names of some relevant suppliers of equipment are provided in Table 26.

**Table 26: Suppliers of Machinery and Equipment**

Name of Supplier	Equipment	Address	Contact
Hafeez Center	All IT Equipment	Block E1 Block E 1 Gulberg III, Lahore	+92-321- 4483350
Techno City Mall	All IT Equipment	Hasrat Mohani Rd, New Chali, Karachi	+92-340-2548397
Dubai Plaza	All IT Equipment	Benazir Bhutto Rd, Block A Satellite Town, Rawalpindi	+92-300- 5550274
MicroTech Industries (Pvt.), Limited Gul Haji Plaza	All IT Equipment	University Rd, Tahkal, Peshawar	+92-311-9515199
Agha Siraj Complex	All IT Equipment	Circular Rd, off Jinnah Road, Quetta	+92-81-2824140
Focus Interiors Office Furniture (Pvt) Ltd	Classroom Furniture	Block D1 Block D 1 Gulberg III, Lahore	+92-42- 35761755
Furniture 4U	Classroom Furniture	Showroom No 4, Shahrah-e-Faisal Rd, Fowler Lines, Karachi	+92-21- 32792953
OfficeFirst	Classroom Furniture	104 West Ginza Plaza, main Jinnah Ave, Islamabad	+92-051-2344460
Mechano Pvt Ltd	Office Equipment	M.M. Alam Rd, Gulberg-2, Block L Gulberg 2, Lahore	+92-300-8441060
Allied CAT	Power Backup	All Over Pakistan	+92-300-8473767

## 11 USEFUL WEB LINKS

**Table 27: Useful Web Links**

Name of Organization	Website
Small and Medium Enterprises Development Authority (SMEDA)	<a href="http://www.smeda.org.pk">www.smeda.org.pk</a>
National Business Development Program	<a href="http://www.nbdp.org.pk">www.nbdp.org.pk</a>
Government of Pakistan	<a href="http://www.pakistan.gov.pk">www.pakistan.gov.pk</a>
Security and Exchange Commission of Pakistan	<a href="http://www.secp.gov.pk">www.secp.gov.pk</a>
Trade Development Authority of Pakistan	<a href="http://www.tdap.gov.pk">www.tdap.gov.pk</a>
Ministry of Information Technology & Telecom	<a href="https://moitt.gov.pk/">https://moitt.gov.pk/</a>
State Bank of Pakistan	<a href="http://www.sbp.gov.pk">www.sbp.gov.pk</a>
Government of Punjab	<a href="http://www.punjab.gov.pk">www.punjab.gov.pk</a>
Government of Sindh	<a href="http://www.sindh.gov.pk">www.sindh.gov.pk</a>
Government of Khyber Pakhtunkhwa	<a href="http://www.kp.gov.pk">www.kp.gov.pk</a>
Government of Balochistan	<a href="http://www.balochistan.gov.pk">www.balochistan.gov.pk</a>
Government of Gilgit-Baltistan	<a href="http://www.gilgitbaltistan.gov.pk">www.gilgitbaltistan.gov.pk</a>
Government of Azad Jammu and Kashmir	<a href="https://www.ajk.gov.pk">https://www.ajk.gov.pk</a>
Federal Board of Revenue	<a href="http://www.fbr.gov.pk">www.fbr.gov.pk</a>
Pakistan Software Export Board	<a href="https://www.pseb.org.pk/">https://www.pseb.org.pk/</a>
Pakistan Software Houses Association for IT and IteS	<a href="https://www.pasha.org.pk/">https://www.pasha.org.pk/</a>
Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	<a href="http://www.fpcci.com.pk">www.fpcci.com.pk</a>
Punjab Information Technology Board	<a href="http://www.pitb.gov.pk">www.pitb.gov.pk</a>
Information, Science & Technology Department of Sindh	<a href="http://www.istd.sindh.gov.pk">www.istd.sindh.gov.pk</a>
Information Technology Board of Khyber Pakhtunkhwa	<a href="http://www.kpitb.gov.pk">www.kpitb.gov.pk</a>
Science and Information Technology Board of Balochis tan	<a href="http://www.balochistan.gov.pk/departments/science-and-information-technology">www.balochistan.gov.pk/departments/science-and-information-technology</a>



## 12 ANNEXURES

### 12.1 Income Statement

Calculations	SMEDA									
Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue from 3 Months Courses	14,610,000	17,839,816	21,567,800	25,953,822	30,999,779	36,908,275	43,687,128	51,592,951	60,642,177	67,434,101
Revenue from 6 Month Courses	18,030,000	22,199,968	26,753,866	32,409,620	38,596,055	46,207,181	54,543,680	64,718,783	75,876,367	84,374,520
Revenue from 1 Year Diploma	30,075,000	36,890,600	44,626,873	53,887,697	64,380,274	76,861,775	90,981,762	107,689,432	126,565,821	140,741,192
<b>Total Revenue</b>	<b>62,715,000</b>	<b>76,930,384</b>	<b>92,948,539</b>	<b>112,251,140</b>	<b>133,976,107</b>	<b>159,977,230</b>	<b>189,212,569</b>	<b>224,001,166</b>	<b>263,084,365</b>	<b>292,549,814</b>
<i>Cost of sales</i>										
Building rental expense	9,600,000	10,560,000	11,616,000	12,777,600	14,055,360	15,460,896	17,006,986	18,707,684	20,578,453	22,636,298
Direct electricity	1,640,069	1,769,634	1,909,435	2,060,281	2,223,043	2,398,663	2,588,157	2,792,622	3,013,239	3,251,285
Human Resource Cost	20,520,000	22,510,440	24,693,953	27,089,266	29,716,925	32,599,467	35,761,615	39,230,492	43,035,849	47,210,327
Consumables Cost	280,000	308,840	340,651	375,738	414,438	457,126	504,210	556,143	613,426	676,609
Fuel Cost-Generator	2,948,400	3,252,085	3,587,050	3,956,516	4,364,037	4,813,533	5,309,327	5,856,188	6,459,375	7,124,691
Equipment Maintenance - Cost	1,805,475	1,991,439	2,196,557	2,422,803	2,672,351	2,947,603	3,251,206	3,586,081	3,955,447	4,362,858
<b>Total cost of sales</b>	<b>36,793,944</b>	<b>40,392,438</b>	<b>44,343,645</b>	<b>48,682,203</b>	<b>53,446,155</b>	<b>58,677,288</b>	<b>64,421,501</b>	<b>70,729,209</b>	<b>77,655,789</b>	<b>85,262,067</b>
<b>Gross Profit</b>	<b>25,921,056</b>	<b>36,537,946</b>	<b>48,604,894</b>	<b>63,568,937</b>	<b>80,529,953</b>	<b>101,299,942</b>	<b>124,791,068</b>	<b>153,271,957</b>	<b>185,428,576</b>	<b>207,287,747</b>
<i>General administration &amp; selling expenses</i>										
Management Staff	10,740,000	11,781,780	12,924,613	14,178,300	15,553,595	17,062,294	18,717,336	20,532,918	22,524,611	24,709,498
Administration benefits expense	1,563,000	1,714,611	1,880,928	2,063,378	2,263,526	2,483,088	2,723,948	2,988,170	3,278,023	3,595,991
Pre-operating expense	-	-	-	-	-	-	-	-	-	-
Indirect Electricity	2,605,578	2,811,418	3,033,520	3,273,169	3,531,749	3,810,757	4,111,807	4,436,640	4,787,134	5,165,318
Communications expense (phone, fax, mail, internet, etc.)	537,000	589,089	646,231	708,915	777,680	853,115	935,867	1,026,646	1,126,231	1,235,475
Office vehicles running expense	245,700	271,007	298,921	329,710	363,670	401,128	442,444	488,016	538,281	593,724
Office expenses (stationery, entertainment, etc.)	1,074,000	1,178,178	1,292,461	1,417,830	1,555,360	1,706,229	1,871,734	2,053,292	2,252,461	2,470,950
Promotional expense	1,567,875	1,923,260	2,323,713	2,806,278	3,349,403	3,999,431	4,730,314	5,600,029	6,577,109	7,313,745
Depreciation expense	5,343,046	5,343,046	5,343,046	4,924,085	6,491,121	6,491,121	6,734,651	7,781,175	10,130,359	11,341,279
Amortization of pre-operating costs	583,940	583,940	583,940	583,940	583,940	-	-	-	-	-
Annual Vehicle Maintenance	40,970	45,190	49,844	54,978	60,641	66,887	73,777	81,376	89,757	99,002
Bad debt expense	313,575	384,652	464,743	561,256	669,881	799,886	946,063	1,120,006	1,315,422	1,462,749
<b>Subtotal</b>	<b>24,614,684</b>	<b>26,626,171</b>	<b>28,841,961</b>	<b>30,901,839</b>	<b>35,200,564</b>	<b>37,673,936</b>	<b>41,287,940</b>	<b>46,108,267</b>	<b>52,619,388</b>	<b>57,987,732</b>
<b>Operating Income</b>	<b>1,306,373</b>	<b>9,911,775</b>	<b>19,762,933</b>	<b>32,667,098</b>	<b>45,329,388</b>	<b>63,626,007</b>	<b>83,503,128</b>	<b>107,163,690</b>	<b>132,809,188</b>	<b>149,300,014</b>
Cafeteria Rental Income	75,000	83,400	92,741	103,128	114,678	127,522	141,804	157,687	175,347	194,986
Gain / (loss) on sale of machinery & equipment	-	-	3,662,400	-	-	6,652,869	-	-	9,674,320	-
Gain / (loss) on sale of office equipment	-	-	-	-	-	-	1,751,000	-	-	-
Gain / (loss) on sale of office vehicles	-	-	-	-	-	-	497,000	-	-	-
<b>Earnings Before Interest &amp; Taxes</b>	<b>1,381,373</b>	<b>9,995,175</b>	<b>23,518,074</b>	<b>32,770,226</b>	<b>45,444,067</b>	<b>70,406,398</b>	<b>85,892,933</b>	<b>107,321,376</b>	<b>142,658,856</b>	<b>149,495,001</b>
<b>Subtotal</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Earnings Before Tax</b>	<b>1,381,373</b>	<b>9,995,175</b>	<b>23,518,074</b>	<b>32,770,226</b>	<b>45,444,067</b>	<b>70,406,398</b>	<b>85,892,933</b>	<b>107,321,376</b>	<b>142,658,856</b>	<b>149,495,001</b>
Tax	783,938	1,843,794	5,512,470	8,126,068	11,928,220	19,927,079	25,232,526	32,732,482	45,100,599	47,493,250
<b>NET PROFIT/(LOSS) AFTER TAX</b>	<b>597,435</b>	<b>8,151,381</b>	<b>18,005,604</b>	<b>24,644,158</b>	<b>33,515,847</b>	<b>50,479,319</b>	<b>60,660,406</b>	<b>74,588,895</b>	<b>97,558,256</b>	<b>102,001,750</b>

## 12.2 Balance Sheet

Calculations	SMEDA										
Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<i>Current assets</i>											
Cash & Bank	1,500,000	4,209,265	13,585,121	17,441,152	23,600,022	37,251,964	44,117,633	82,577,686	155,766,331	247,330,908	360,682,251
Accounts receivable		3,436,438	3,825,901	4,654,217	5,621,909	6,745,952	8,053,516	9,566,844	11,320,924	13,344,809	15,222,854
Pre-paid building rent	800,000	880,000	968,000	1,064,800	1,171,280	1,288,408	1,417,249	1,558,974	1,714,871	1,886,358	-
<b>Total Current Assets</b>	<b>2,300,000</b>	<b>8,525,704</b>	<b>18,379,021</b>	<b>23,160,169</b>	<b>30,393,211</b>	<b>45,286,324</b>	<b>53,588,397</b>	<b>93,703,503</b>	<b>168,802,126</b>	<b>262,562,075</b>	<b>375,905,105</b>
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	1,474,514	1,327,063	1,179,611	1,032,160	884,708	737,257	589,806	442,354	294,903	147,451	-
IT Equipments for Classes	6,104,000	4,089,680	2,075,360	8,097,156	5,384,198	2,732,279	10,660,171	7,088,472	3,597,135	14,034,464	9,332,206
Class Room Furniture	2,440,000	2,074,000	1,708,000	1,342,000	976,000	610,000	244,000	4,635,149	3,939,877	3,244,604	2,549,332
Furniture & fixtures	2,093,000	1,779,050	1,465,100	1,151,150	837,200	523,250	209,300	3,975,970	3,379,575	2,783,179	2,186,784
General Equipment	3,492,500	2,339,975	1,187,450	34,925	5,039,398	3,376,396	1,713,395	50,394	7,271,447	4,871,870	2,472,292
Office vehicles	1,988,000	1,689,800	1,391,600	1,093,400	795,200	497,000	198,800	4,127,406	3,508,295	2,889,184	2,270,074
Office equipment	7,004,000	5,953,400	4,902,800	3,852,200	2,801,600	1,751,000	700,400	14,541,426	12,360,212	10,178,998	7,997,784
Advance Against Building Rent	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000	2,400,000
<b>Total Fixed Assets</b>	<b>26,996,014</b>	<b>21,652,968</b>	<b>16,309,921</b>	<b>19,002,991</b>	<b>19,118,304</b>	<b>12,627,183</b>	<b>16,715,872</b>	<b>37,261,172</b>	<b>36,751,444</b>	<b>40,549,751</b>	<b>29,208,471</b>
<i>Intangible assets</i>											
Pre-operation costs	2,919,698	2,335,759	1,751,819	1,167,879	583,940	-	-	-	-	-	-
<b>Total Intangible Assets</b>	<b>2,919,698</b>	<b>2,335,759</b>	<b>1,751,819</b>	<b>1,167,879</b>	<b>583,940</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>TOTAL ASSETS</b>	<b>32,215,712</b>	<b>32,514,430</b>	<b>36,440,762</b>	<b>43,331,039</b>	<b>50,095,455</b>	<b>57,913,507</b>	<b>70,304,269</b>	<b>130,964,675</b>	<b>205,553,570</b>	<b>303,111,826</b>	<b>405,113,576</b>
<b>Liabilities &amp; Shareholders' Equity</b>											
<i>Current liabilities</i>											
<b>Total Current Liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Other liabilities</i>											
<b>Total Long Term Liabilities</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>Shareholders' equity</i>											
Paid-up capital	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712	32,215,712
Retained earnings		298,718	4,225,049	11,115,326	17,879,742	25,697,794	38,088,557	98,748,963	173,337,857	270,896,114	372,897,864
<b>Total Equity</b>	<b>32,215,712</b>	<b>32,514,430</b>	<b>36,440,762</b>	<b>43,331,039</b>	<b>50,095,455</b>	<b>57,913,507</b>	<b>70,304,269</b>	<b>130,964,675</b>	<b>205,553,570</b>	<b>303,111,826</b>	<b>405,113,576</b>
<b>TOTAL CAPITAL AND LIABILITIES</b>	<b>32,215,712</b>	<b>32,514,430</b>	<b>36,440,762</b>	<b>43,331,039</b>	<b>50,095,455</b>	<b>57,913,507</b>	<b>70,304,269</b>	<b>130,964,675</b>	<b>205,553,570</b>	<b>303,111,826</b>	<b>405,113,576</b>

## 12.3 Cash Flow Statement

Calculations	SMEDA										
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		597,435	8,151,381	18,005,604	24,644,158	33,515,847	50,479,319	60,660,406	74,588,895	97,558,256	102,001,750
Add: depreciation expense		5,343,046	5,343,046	5,343,046	4,924,085	6,491,121	6,491,121	6,734,651	7,781,175	10,130,359	11,341,279
Amortization of pre-operating costs		583,940	583,940	583,940	583,940	583,940	-	-	-	-	-
Accounts receivable		(3,436,438)	(389,463)	(828,316)	(967,692)	(1,124,043)	(1,307,564)	(1,513,328)	(1,754,080)	(2,023,885)	(1,878,045)
Pre-paid building rent	(800,000)	(80,000)	(88,000)	(96,800)	(106,480)	(117,128)	(128,841)	(141,725)	(155,897)	(171,487)	1,886,358
Accounts payable		-	-	-	-	-	-	-	-	-	-
Cash provided by operations	(800,000)	3,007,983	13,600,905	23,007,474	29,078,011	39,349,736	55,534,035	65,740,005	80,460,092	105,493,243	113,351,343
<i>Financing activities</i>											
Issuance of shares	32,215,712	-	-	-	-	-	-	-	-	-	-
Cash provided by / (used for) financing activities	32,215,712	-	-	-	-	-	-	-	-	-	-
<i>Investing activities</i>											
Capital expenditure	(29,915,712)	-	-	(8,036,116)	(5,039,398)	-	(10,579,810)	(27,279,951)	(7,271,447)	(13,928,666)	-
Acquisitions											
Cash (used for) / provided by investing activities	(29,915,712)	-	-	(8,036,116)	(5,039,398)	-	(10,579,810)	(27,279,951)	(7,271,447)	(13,928,666)	-
<b>NET CASH</b>	<b>1,500,000</b>	<b>3,007,983</b>	<b>13,600,905</b>	<b>14,971,358</b>	<b>24,038,613</b>	<b>39,349,736</b>	<b>44,954,225</b>	<b>38,460,053</b>	<b>73,188,645</b>	<b>91,564,577</b>	<b>113,351,343</b>

## 13 KEY ASSUMPTIONS

### 13.1 Operating Cost Assumptions

**Table 28: Operating Cost Assumptions**

Description	Details
Building rent growth rate	10%
Furniture and fixture depreciation	15%
Vehicle depreciation	15%
Office equipment depreciation	15%
Inflation growth rate	10.3%
Wage growth rate	9.7%
Electricity price growth rate	7.9%
Office equipment price growth rate	9.6%
Office vehicle price growth rate	11.0%

### 13.2 Revenue Assumptions

**Table 29: Revenue Assumptions**

Description	Details
Price growth rate	11.2%
Initial year capacity utilization	50%
Capacity utilization growth rate	5%
Maximum capacity utilization	90%

### 13.3 Financial Assumptions

**Table 30: Financial Assumptions**

Description	Details
Project life (Years)	10
Debt: Equity	0:100
Discount Rate (100% Equity)	15%
Discount Rate (50:50, Debt: Equity )	22%

### 13.4 Cash Flow Assumptions

**Table 31: Cash Flow Assumptions**

Description	Details
Accounts Receivable Cycle (in days)	20
Accounts Payable Cycle (in days)	0

### 13.5 Debt-Related Assumption

**Table 32: Debt-Related Assumption**

Description of Cost	Details
Project Life (Years)	10
Debt: Equity	50:50
Discount Rate	22%
Debt Tenure	5 years
Grace Period	1 Year
Interest Rate (KIBOR+3%)	19%

# Small and Medium Enterprises Development Authority

## HEAD OFFICE

4th Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road, Lahore  
Tel: (92 42) 111 111 456, Fax: (92 42) 36304926-7

[www.smeda.org.pk](http://www.smeda.org.pk), [helpdesk@smeda.org.pk](mailto:helpdesk@smeda.org.pk)

REGIONAL OFFICE PUNJAB	REGIONAL OFFICE SINDH	REGIONAL OFFICE KPK	REGIONAL OFFICE BALOCHISTAN
3 <sup>rd</sup> Floor, Building No. 3, Aiwan-e-Iqbal Complex, Egerton Road Lahore, Tel: (042) 111-111-456 Fax: (042) 36304926-7 <a href="mailto:helpdesk.punjab@smeda.org.pk">helpdesk.punjab@smeda.org.pk</a>	5 <sup>TH</sup> Floor, Bahria Complex II, M.T. Khan Road, Karachi. Tel: (021) 111-111-456 Fax: (021) 5610572 <a href="mailto:helpdesk-khi@smeda.org.pk">helpdesk-khi@smeda.org.pk</a>	Ground Floor State Life Building The Mall, Peshawar. Tel: (091) 9213046-47 Fax: (091) 286908 <a href="mailto:helpdesk-pew@smeda.org.pk">helpdesk-pew@smeda.org.pk</a>	Bungalow No. 15-A Chaman Housing Scheme Airport Road, Quetta. Tel: (081) 831623, 831702 Fax: (081) 831922 <a href="mailto:helpdesk-qta@smeda.org.pk">helpdesk-qta@smeda.org.pk</a>