FORWARDPIP
SOLUTIONISTS

Business Systems Overview

Major Project

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Table of contents

PROPOSAL

Title page 6
Contents of the proposal 7
Scope
Describes the business problems addressed by the ForwardPIP Solutionists solution *8*
Advantages
Highlights the benefits of the ForwardPIP Solution *11*
Financial
Includes the total price and delivery date *13*
Plan
Describes the steps taken to develop the proposal *14*
Deliverables
Highlights what Snails Pace Sporting Club will receive *16*
Documentation & Training *17*
Method of Delivery *18*
Acceptance
Identifies the method employed to determine the full acceptance of the project *18*
Terms, Conditions and Assumptions *18*
Warranties *20*
Terminology *22*

FUNCTIONAL SPECIFICATIONS

Title page 27
Contents of the Functional Specification 28
System overview 29
Major Objectives 30
Special System Requirements 31
Component Descriptions 32
Other Deliverables 33
Specification Changes 33
Acceptance 33
User and Project Team Interfaces 34

Users Responsibilities 34
Terms, Conditions and Assumptions 34

APPENDIX A)

Requirements Document 35
Contents of the Requirements Document 36
The Project Team
About ForwardPIP Solutionists 37
Analysis of given Scenario 37
Requirements Document
Overview of the club 37
Major Problem 37
Project Goals 38
Major Functions 39
General Outputs 39
General Information Inputs 40
Performance 40
Growth 40
Operation and Environment 40
Compatibility, Interfaces 41
Reliability, Availability 41
Human Interface 41
Organisational Impact 42
Maintenance and Support 43
Documentation and Training 44
Terms and Conditions 44

APPENDIX B)

Feasibility Decision 45

APPENDIX C)

Potential Risks and & Data Analysis 48

APPENDIX D)

Preliminary Project Plan 51

APPENDIX E)

Gathering of information for the requirements document 60

APPENDIX F)

Contractor's Quote 72

APPENDIX G)

Considerations to take into account for the solution 74

APPENDIX H)

Natsoft Till Software 77

FORWARDPIP
SOLUTIONISTS

20/05/99

Dear Head Honcho,

Thank you for giving ForwardPIP Solutionists the opportunity to propose an IT solution to improve Snails Pace Sporting Club's daily operations.

ForwardPIP Solutionists' proposal includes a number of computers linked together allowing them to communicate with each other (and share information). This system will handle registration, finance, auditing, and management information. Privileged data will only be accessible by authorised personnel. Many repetitive tasks will be automated, thus reducing the time it takes to do these tasks.

On completion of ForwardPIP Solutionists' solution, all staff at Snails Pace Sporting Club will be competent in using the computerised network to assist them in carrying out their daily duties. All of the hardware and software will be provided with technical documentation and user documentation.

This proposed solution excels in a very important area:
With the exception of the network administrator, no previous computer experience is required.

This proposal, based on a fixed price contract, includes all labour, hardware and software costs. The project is estimated to take 50 working days to complete. The total cost is $98,798 payable in two installments. The first installment is an initial up front payment of $20,000, and the second is the balance payable on completion.

Please note that the attached quote is valid for 30 days only. If our proposal is accepted within this period, we can commence work immediately. If we do not have your acceptance of the quote within the 30 day period, we cannot guarantee an immediate start, due to future schedules.

Yours faithfully

Ian Dickson
Project Manager
ForwardPIP Solutionists

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URL: www-personal.usyd.edu.au/~idickson/forwardpip/

FORWARDPIP
SOLUTIONISTS

Proposal

I.T. solution for Snails Pace Sporting Club

Author:
ForwardPIP Solutionists

Revision number: 1

CONTENTS OF THE PROPOSAL

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Terms, Conditions and Assumptions *18*

Warranties *20*

Terminology *22*

SCOPE

THIS PROPOSAL includes a number of computers linked together, forming a Local Area Network (LAN), allowing them to communicate with each other (and share information). There will be a central computer (server) which controls the network. This system will handle registration, finance, auditing, and management information. Privileged data will only be accessible by authorised personnel. Many repetitive tasks will be automated, thus reducing the time it takes to do these tasks.

The rollout of the LAN at the Club will involve deployment of 6 desktops by the end of the agreed period. Most of these desktops will reside in the Club's main area, which includes the admin areas and bar, and the other will reside in the Golf Shop. As for hardware, the desktop PCs targeted for deployment employ processors of Pentium II, running at 400MHz, RAM of 64 megabytes, and hard drives with a capacity of 3.2 gigabytes.

A client/server network requires a system (the file server) dedicated to handling all network functions such as print queues and file access, and a hub and network interface cards. A cable is run from each system's NIC (Network Interface Card), to the hub, which is connected to the file server. Each NIC has an assigned address, so the file server knows which computer is making a request and can send the appropriate command or data. The software that keeps track of all of these operations is a Network Operating System, or NOS, such as Microsoft Windows NT or Novell Netware.

Seeing as Snails Pace Sporting Club's staff are generally not computer literate, it was decided that they should use industry standard products (such as Microsoft) so as to eliminate/minimize incompatibility issues, and to keep a smooth transition between different application software. Such software incorporates user friendly online support which is essential for inexperienced users.

It was deemed that Snails Pace Sporting Club's computer environment should not be multi-platformed at this stage, as there is no need for this, and it would also contribute towards incompatibility issues. Using Windows NT Server as a server operating system will enable easy upgrading to Microsoft Backoffice if/when the need arises. This will enable the club to take advantage of the increasingly

sophisticated internet technologies, thus attracting more members to the club as well as keeping the existing ones happy.

With the deployment of our solution, the following issues will be addressed:

- There are many times when the facilities are not being used, even though they are (apparently) fully booked. This is due to the bookings being incorrectly stored.

- The stock ordering/inventory system is another problem. At any one time the is no accurate idea of what stock is available in any given area of the club. Many hours are spent collating what stock the club already has so that they can identify what stock is required. The inability to track the turnaround of this stock further contributes to the problem.

- The distribution and retrieval of managerial/administrative information is erratic. Paper is passed from person to person before it is finally implement or stored.

- Member growth is limited at present, due to the inefficient and unreliable working system employed by the club at present.

- Lack of maintenance spent on the golf course makes it unappealing and as a result undervalued as an important facility within the club . The poor state of the course makes it harder to play golf and, therefore each round takes longer for people to finish then it should. The booking method makes it hard for staff to get messages relayed reliably to those people responsible for the control of these sporting areas.

- Lack of communication.

A dataflow chart can help increase our understanding of the information flow and dataflow, as well as the movement of physical goods. Figure 1 shows the flow of information and data within Snails Pace Sporting Club.

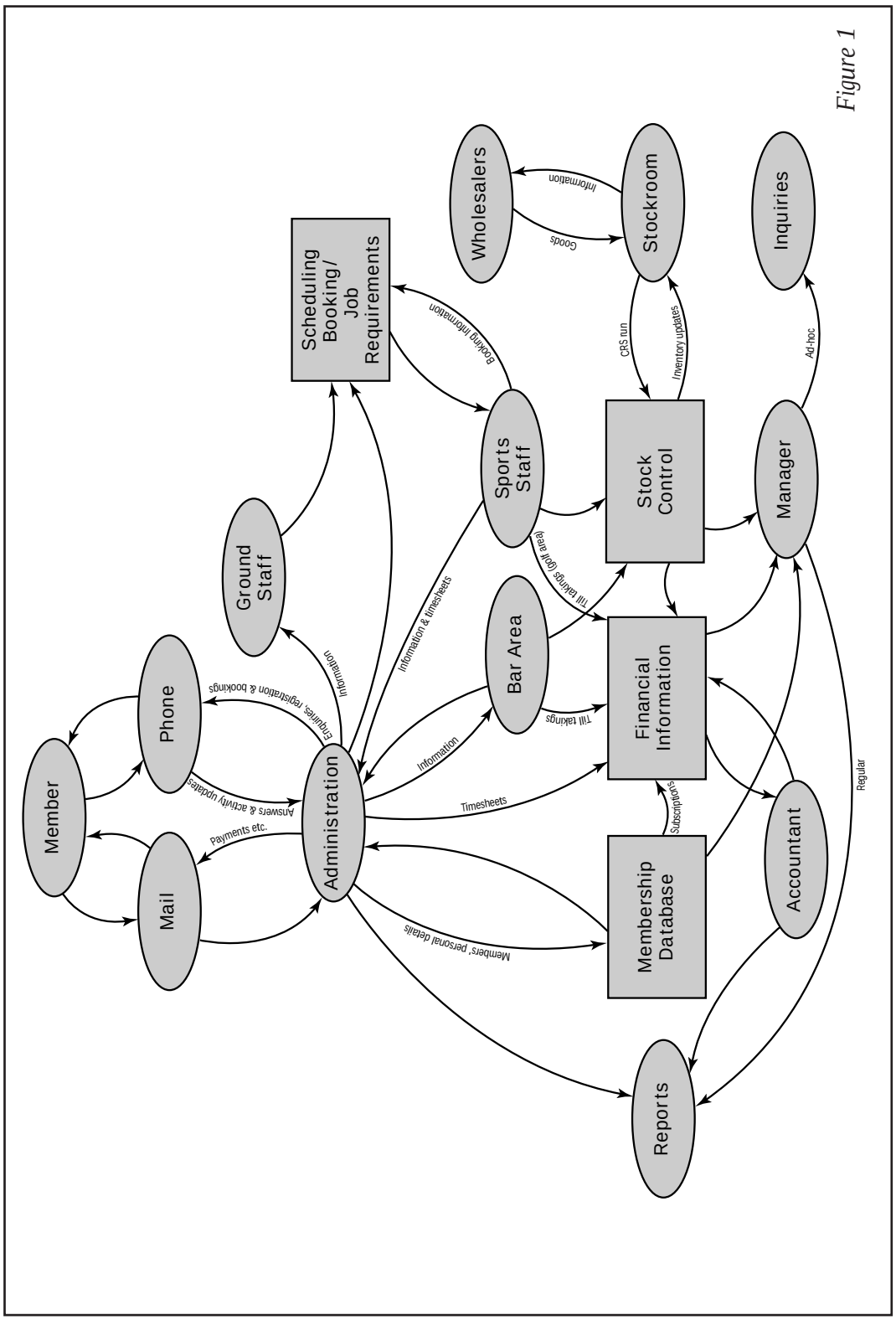
Wholesalers
Stockroom
Inquiries
Information
Goods
Scheduling Booking/ Job Requirements
Booking information
CRS run
Inventory updates
Ad-hoc
Sports Staff
Stock Control
Manager
Ground Staff
Till takings (Golf area)
Information & timesheets
Bar Area
Financial Information
Information
Till takings
Phone
Enquiries, registration & bookings
Answers & activity updates
Member
Administration
Timesheets
Subscriptions
Payments etc.
Mail
Membership Database
Accountant
Members' personal details
Regular
Reports

Figure 1

ADVANTAGES

This proposed solution excels in a very important area:
With the exception of the network administrator, no previous computer experience is required.

On completion of this solution, all staff at Snails Pace Sporting Club will be competent in using the computerised network to assist them in carrying out their daily duties. All of the hardware and software will be provided with technical documentation and user documentation.

A client/server network has many advantages over a peer to peer network, particularly in the case of Snails Pace Sporting Club. A client/server network will enable the club to expand. Also, the hardware/software combination that ForwardPIP Solutionists has chosen will also enable the club to cope with this expansion.

The performance made possible through this multi-tasking installation is paramount. The storage, organisation and gathering of data is a necessity. Information needs to be easily and quickly generated and solutions to problems such as low stock or late subscriptions picked up automatically. With the customised software, users will be able to run databases side by side with word-processing, electronic-mail, or development tools without delays or shutdowns. Users will get an immediate response after launching complex queries against enterprise databases. Snails Pace Sporting Club can be sure that running many applications side by side, for example, routinely using Microsoft Excel, Microsoft Project, Microsoft Outlook Express, and Organiser simultaneously, will result in a smooth efficiently run organisation. The benefits of such an environment can extend to users and club members alike. The less confusion and better use of I.T. resources, the fewer the mistakes made, and the more time the club will have for other work and growth.

An I.T. solution such as Ethernet with Windows NT software can not only increase the speed and accuracy of in-house administration but also the protection available against the risk of data loss and corruption

Log on and user profiles also play a role in helping the club maintain, if not improve the kind of accessibility and manageability the club is used to in its present environment.

The benefits of installing our solution can be broken down into two halves:

1. Growth Potential - features that address the immediate concerns outlined in the requirements document. These features will ensure that Snails Pace Sporting Club realizes it's growth potential.

2. Growth Management - additional features that will fully equip Snails Pace Sporting Club for the expected growth.

1. Growth Potential

This area provides answers to address the issues that were outlined in the requirements document. These answers will incorporate:

- a booking system that is reliable, allowing users to see at a glance whether facilities are available or not.
- the ability to add and alter booking information as required.
- a stock inventory system incorporating a till which can automatically control cash transactions and stock control. As purchases are made, or goods are used, it will be able to combine stock control/turnover with auditing. This system will be applied to the bar area, the administration area, and the sports area.
- a bar system incorporating automated drink dispensers and computerised tills.
- membership registration with the ability to perform mail merges from queries based on any given criteria.
- a financial system that processes accounts receivables, wages, sales, membership fees.
- a staff scheduling system that can be accessed by all staff and will be updated on demand.
- Information Management that can give access for the ground staff to prioritise tasks to be done on that day.
- a communication system that is speedy, reliable, and efficient. The system will also allow messages to be stored for later reference.

2. Growth Management

In order to cope with the sustained growth that is expected from installing a computerised system, ForwardPIP Solutionists considers the following points essential:

- a stable desktop environment for employees.
- benefits in the areas of security, manageability, accessibility.
- pre-emptive multitasking capabilities (which allows more than one task to be executed simultaneously)
- users will be able to run databases side by side with word-processing, electronic-mail, and other applications without delays
- increases in speed and accuracy of in-house administration.
- the protection available against the risk of data loss and corruption.
- the ability to force a desktop logon or shut down a system after illegal password attempts, and the ability to grant different users different access levels through user profiles.

FINANCIAL

The completion of the project will take 50 days from the start date. All hardware and proprietary software along with customised software and all licences are included in the total price as shown below.

Hardware	$20,618.00
Software	$10,998.00
Labour	$67,182.50
Total	$98,798.50

PLAN

The project team at ForwardPIP Solutionists have had extensive experience in computer modernisations. Figure 2 illustrates the structure of the Project Team.

The project team has used a 7 phased methodology in order to recognise and rectify the problems at Snails Pace Sporting Club. The 7 phases are as follows:

Definition, Analysis, Design, Development,
System Testing, Acceptance and Operation/Support.

There will be milestones that will be identified by the completion of each phase. Reviews will be held on a regular basis as shown in the project plan PERT chart (Figure 3).

The analysis phase produced the functional specification document which will be used by the project team and Snails Pace Sporting Club to specify precisely what the system will do.

ForwardPIP Solutionists requires that one representative from Snails Pace Sporting Club be available at all times to answer any questions regarding the project. Safe secure locations must be provided for the storage of all materials prior to installation.

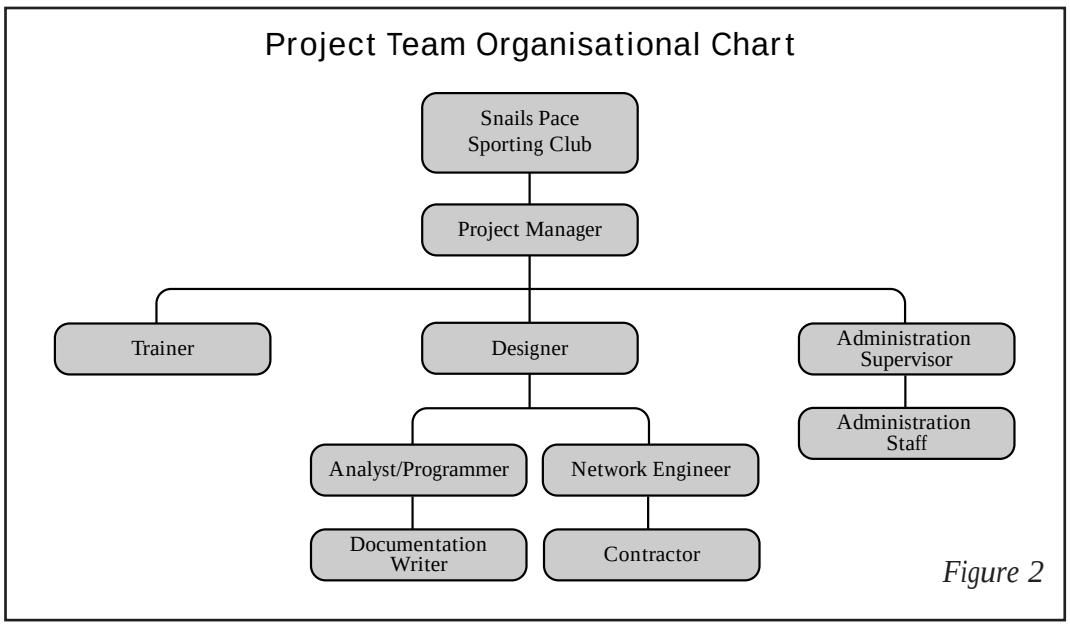

Figure 2

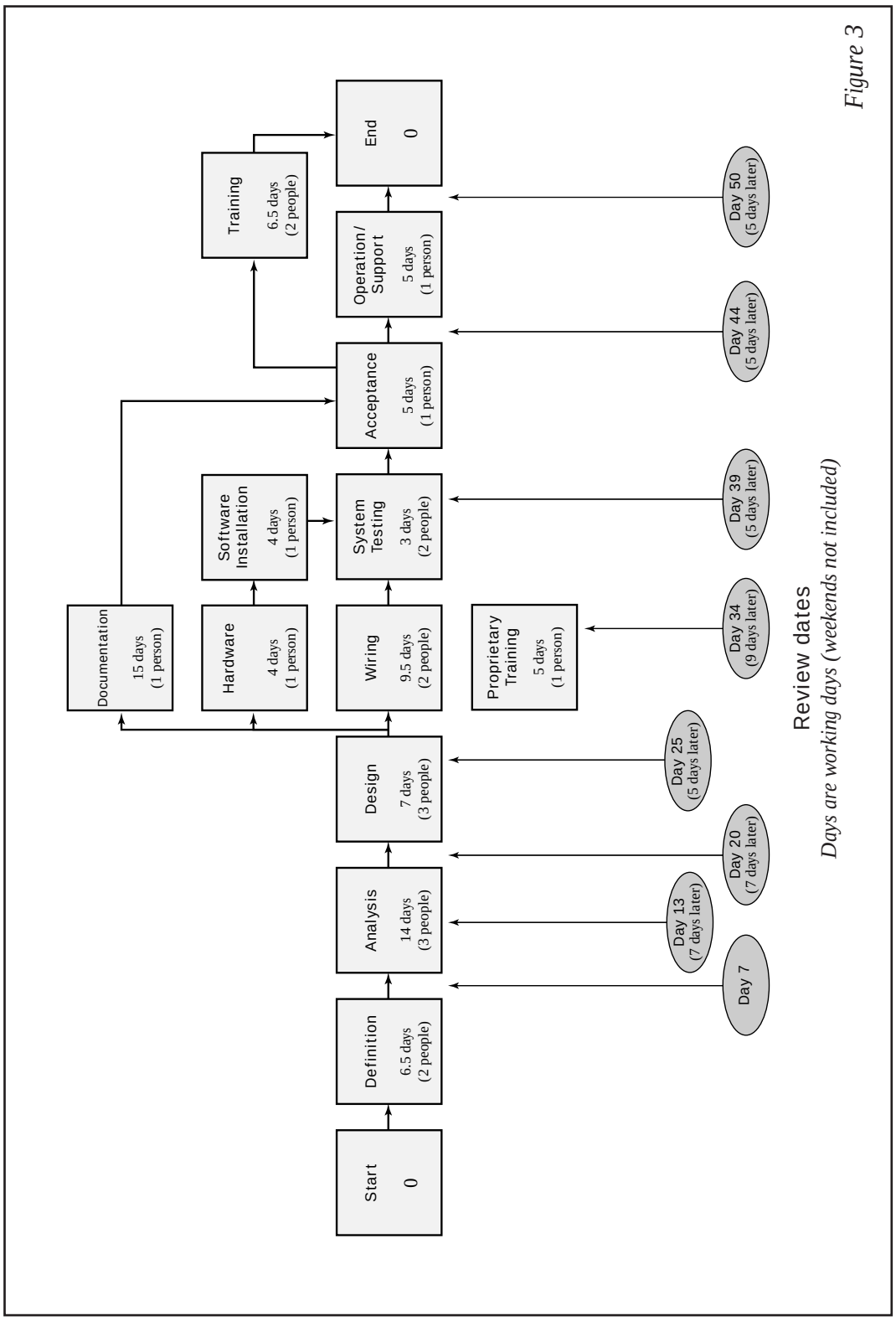
Start
0
Definition
6.5 days
(2 people)
Analysis
14 days
(3 people)
Design
7 days
(3 people)
Wiring
9.5 days
(2 people)
Hardware
4 days
(1 person)
Documentation
15 days
(1 person)
Software Installation
4 days
(1 person)
System Testing
3 days
(2 people)
Proprietary Training
5 days
(1 person)
Acceptance
5 days
(1 person)
Training
6.5 days
(2 people)
Operation / Support
5 days
(1 person)
End
0
Day 7
Day 13
(7 days later)
Day 20
(7 days later)
Day 25
(5 days later)
Day 34
(9 days later)
Day 39
(5 days later)
Day 44
(5 days later)
Day 50
(5 days later)
Review dates
Days are working days (weekends not included)

Figure 3

DELIVERABLES

The rollout of the LAN at the Club will involve deployment of 6 desktops by the end of the agreed period. Most of these desktops will reside in the Clubs main area, which includes the admin areas and bar, and the other will reside in the Golf Shop. As for hardware, the desktop PCs targeted for deployment employ processors of Pentium II running at 400MHz, RAM of 64 megabytes, and hard drives of 3.2 gigabytes.

To expedite the rollout, Snails Pace Sporting Club will be offered the continuing consulting services of our IT professionals as well as our on-site engineers. The support services available will make a big difference in the speed and ease of this rollout.

Snail Pace Sporting Club will receive:

HARDWARE

Server

1 - Pentium II 400MHz, 128 RAM 10G Hard drives

Backup Unit

1 - Tape Drive for Backing, SEA 141 Internal SCSI Kit
5 - Tape Drive Tapes

Workstations and Peripherals

6 - Pentium II 400MHz, 128 RAM 3.2G Hard drives
6 - 15” CRT monitors
6 - 104 key keyboards & Mice
1 - B/W Lexmark Optra laser printer
3 - Natsoft POS tills
1 - Natsoft drink dispenser

Networking

Cat5 Cable, Patch Panel, Cabinet, Power points, Jacks, Jack boxes

Ethernet Network Combo Cards

7 - 10Mb/100Mb D-Link DFE-530TX PCI 10/100 Network Interface cards

Hub

1 - Ethernet Netgear FE108 10-port Hub

SOFTWARE

Server Operating System
Windows NT Server

Workstation Operating System
Windows NT Workstation

Application Software & Utilities
Microsoft Office 97 (which includes Access Excel and Word)
MYOB Pro (Accounting Software)
Exchange Server
Norton System Works (including Norton Utilities)
Seagall back up tape drive software (included with hardware)
Natsoft till software (included with hardware)

DOCUMENTATION AND TRAINING

Documentation containing operating instructions for the hardware and the software will be provided by ForwardPIP Solutionists. Fundamental training on all software will be provided for the existing staff. The hardware and software has been categorised into the following structure:

Hardware (Technical and User)
• Network (NIC, Cabling specs etc) • Server • Workstations • Printers & Peripherals
Software (Proprietary)
Operating Systems • Server OS • Workstation OS *Application Software* • Microsoft Office • MYOB • Microsoft Access
Software (Customised)
• Database (designed by ForwardPIP Solutionists)

METHOD OF DELIVERY

Delivery will be the responsiblity of ForwardPIP Solutionists and will be undertaken either directly by ForwardPIP Solutionists, or by the supplier of the equipment. Delivery times will be within normal working hours (9.00am - 5.00pm) unless otherwise specified. If delivery needs to be undertaken outside of these hours, ForwardPIP Solutionists will only do so at the approval of Snails Pace Sporting Club.

Delivery will be staggered as the project develops - it will generally follow the PERT diagram as shown in the plan sub-section of this document (Figure 2).

A CAT5 100 Mhz Ethernet installation will be installed as per the installation diagram (Figure 3).

ACCEPTANCE

This project is based upon all that is laid out and agreed upon within the requirements document. Any deviation from the requirements document will be viewed as additional work and will be chargeable.

TERMS AND CONDITIONS

The "'Agreement" is made between Snails Pace Sporting Club and ForwardPIP Solutionists. All products will be sold as NEW with a manufacturers warranty. Warranty claims on these products will be made to ForwardPIP Solutionists. Snails Pace Sporting Club must be satisfied with the service delivery and availability, and contingency plans prior to the transfer of the purposed plan to the club.

The payment arrangement will consist of an initial up front payment, with the second payment made when the work has been successfully completed and tested.

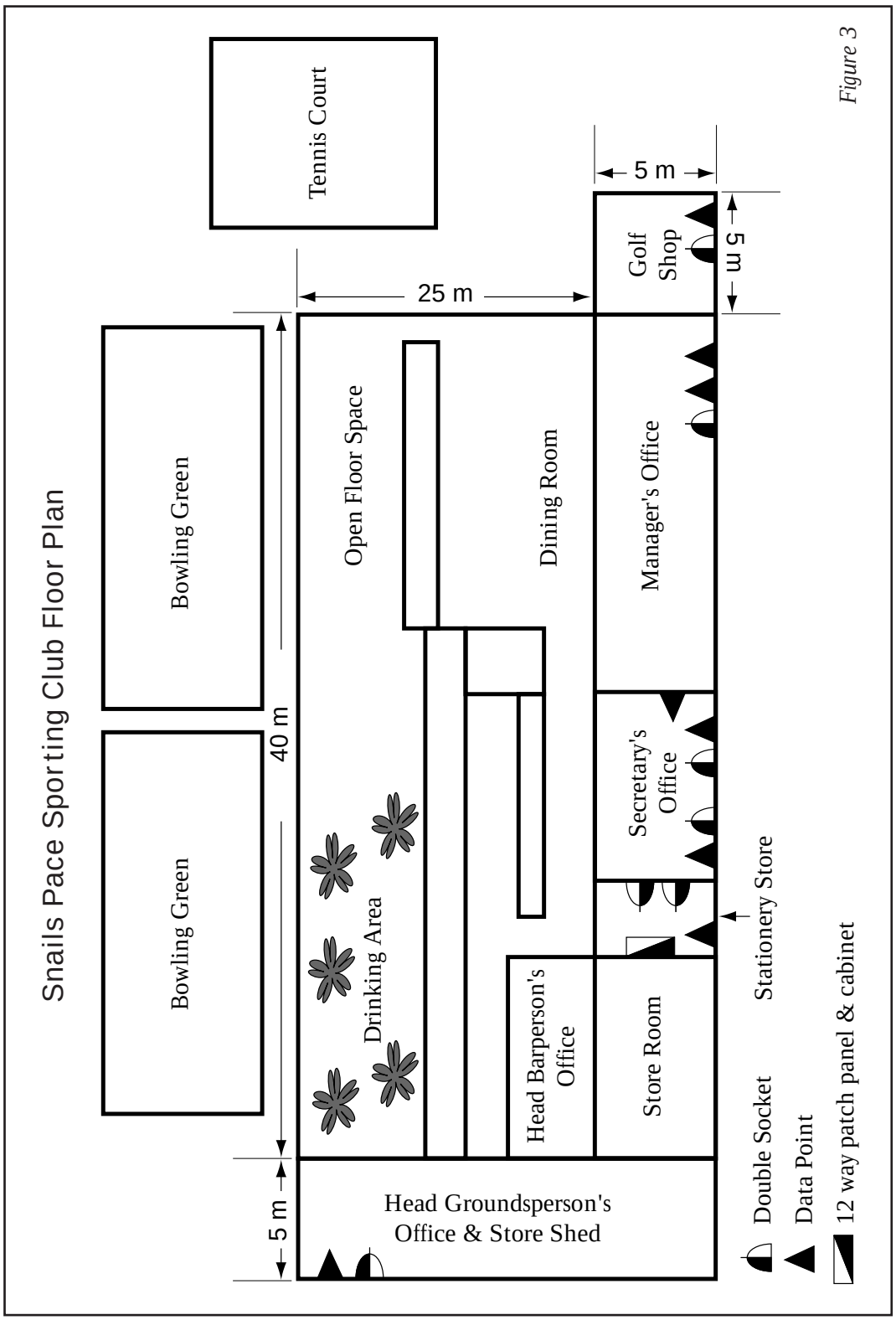
Snails Pace Sporting Club Floor Plan
Tennis Court
5 m
Golf Shop
5 m
25 m
Bowling Green
Open Floor Space
Dining Room
Manager's Office
40 m
Bowling Green
Drinking Area
Secretary's Office
Stationery Store
Head Barperson's Office
Store Room
5 m
Head Groundsperson's Office & Store Shed
Double Socket
Data Point
12 way patch panel & cabinet

Figure 3

WARRANTIES

FORWARDPIP SOLUTIONISTS warrants to Snails Pace Sporting Club that the hardware systems included in the FORWARDPIP SOLUTIONISTS product will be free from defects in material and/or workmanship for the following periods:

Hardware . . . . . .One (1) year
Customised Software . . . . . .One (1) year
Proprietry Software . . . . . .One (1) year

During the warranty period, FORWARDPIP SOLUTIONISTS will correct any defects in material or workmanship, or any failure of the ForwardPIP Solutionists' product to conform to specifications, at no charge for labour and materials. Any replacement part or product shall be new or serviceably used and is warranted for the remainder of the original warranty period. This warranty period is not extended as a result of purchasing any additional parts or products from us in upgrading your ForwardPIP Solutionists product. If we are retained to support the system after the agreed period of warranty has expired, we at Forward PIP Solutionists will continue to be responsible for initiating and further developing the service that we have installed. Our recommendations we believe will be evaluated by the stability, reliability, usefulness, and satisfaction with the present service.
Snails Pace Sporting Club must promptly notify FORWARDPIP SOLUTIONISTS in writing if there is a defect in material or workmanship. Written notice in all events must be received by FORWARDPIP SOLUTIONISTS before expiration of the warranty period. This warranty is not transferable.

This Limited Warranty covers normal use. FORWARDPIP SOLUTIONISTS does not warrant or cover:
Products not purchased directly from FORWARDPIP SOLUTIONISTS or an authorised FORWARDPIP SOLUTIONISTS reseller;
Impact with other objects, dropping, spilled liquids, or immersion in liquids;
Disasters such as fire, flood, wind, earthquake, or lightning;
Unauthorised attachments, alterations, modifications, or foreign objects;
Damage caused by or to peripheral devices, not supplied as part of the original contract

Problems resulting from adjustments to the purchased hardware and software configuration and additional hardware and software;
Problems evolving from configuration conflicts between the purchased product's operating system and software and any additional software application installations and operations and hardware from suppliers other than FORWARDPIP SOLUTIONISTS ;
Use of the hardware system for purposes other than those for which it was designed;
Improper maintenance;
Any unauthorised repair during the warranty period by a service provider other than FORWARDPIP SOLUTIONISTS (or its authorised agent).
FORWARDPIP SOLUTIONISTS failure to repair the problem product or to conform to the warranty after a reasonable number of attempts will be limited to a replacement of the product. This remedy is the customer's exclusive remedy for breach of warranty.
UNDER NO CIRCUMSTANCES SHALL FORWARDPIP SOLUTIONISTS BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE OR STRICT LIABILITY. SUCH DAMAGES INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF REVENUE, LOSS OF DATA, LOSS OF PROFITS, LOSS OF USE OF THE FORWARDPIP SOLUTIONISTS' PRODUCT OR PERIPHERALS, COST OF CAPITAL, COST OF REPLACEMENT EQUIPMENT, FACILITIES OR SERVICES, DOWN TIME, THE PURCHASER'S TIME, THE CLAIMS OF THIRD PARTIES, INCLUDING CUSTOMERS, AND INJURY TO PROPERTY.

Disclaimer of Warranties

THE WARRANTY STATED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THIS PRODUCT. ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY FORWARDPIP SOLUTIONISTS , ITS AGENTS OR EMPLOYEES, SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY.

TERMINOLOGY

application software
Software that has been designed for a specialised use (ie. word processing etc) and runs on top of the operating system

colour depth
Refers to the amount of memory (and therefore number of simultaneously displayable colours) available to store colour information for each pixel. see 'bit planes'.

CPU
Central Processing Unit. This is the heart and brains of your computer. It is responsible for executing code, moving data, calculations, etc. For PC's, this chip is a member of the X86 family including 8088 through 80486, Pentium and Nextgen.

CRT
Cathode Ray Tube. Basically the same technology as is in modern television sets. One or more beams of electrons are focused onto phosphor, causing it to glow. The phosphor is arranged into an array (usually close to rectilinear), and the electron beam scans the phosphor on the screen (similar to how you read text - left to right and top to bottom), usually 60+ times per second.

desktop
An alternative word to describe a desktop computer (as opposed to a laptop computer)

display
Usually used to indicate the monitor or flat-panel device used as the primary visual interface.

dot pitch
The distance between a phosphor dot of one phosphor triad to its closest diagonal neighbour of the same colour on a monitor. Expressed in mm - i.e. .28 dot pitch means .28 mm between triads. A smaller value indicates that the phosphor dots are more closely spaced, and that the resulting image displayed will be crisper.

EGA
Enhanced Graphics Adapter (IBM). Precursor to VGA, all EGA video modes are supported in VGA, though register compatibility is not 100%. EGA cards generate a digital signal, and thus will not drive a modern, analog monitor.

EISA
Extended Industry Standard Architecture. This 32-bit bus standard

was created primarily to compete with IBM's MCA bus. It runs at speeds of up to 8.33 MHz. EISA is a dying standard.

GUI

Graphical User Interface. In contrast to text-based interfaces like DOS or UNIX, GUI's provide more flexibility in terms of colour, pixel addressability and types of objects that can be displayed. Examples of GUI's include X-Windows, Microsoft Windows 3.1, OS/2.

hardware

The physical components that make up a computer (ie. monitor, keyboard etc) horizontal refresh

see horizontal scan rate horizontal scan rate (horizontal frequency)

The frequency, expressed in kHz (thousands of times per second), at which the horizontal deflection circuit operates. This roughly translates to the number of scanlines displayed on a monitor in one second.

hub

A device in which all workstations on a client/server network are connected to.

interlaced

Standard NTSC television signals are interlaced, meaning that each video frame is divided into two separate fields of alternating scanlines. The resulting fields are displayed sequentially, such that what was originally a 30 frame per second (fps) refresh becomes 60 Hz at half the vertical pixel addressability. Thin horizontal lines will appear to flicker on an interlaced display since their effective refresh rate is only 30 Hz.

ISA

Industry Standard Architecture. This is a 16-bit bus standard which runs at speeds of up to 8.33 MHz. The vast majority of peripheral add-in cards like modems, sound cards, cdrom interfaces and other low-bandwidth applications are still ISA based. VLB and PCI provide higher bandwidth for video and disk I/O operations.

NIC

Network Interface Card. The card you install into a computer to give it networking capabilities.

non-interlaced

This means that an entire frame is displayed with each screen refresh. Non-interlaced displays produce a more pleasing screen image since thin horizontal lines don't flicker with each screen refresh.

NOS
Network Operating System. The operating system that resides on the server and keeps control of the network.

network
The grouping of more than one computers to allow the sharing of resources (ie. printers etc), applications and files.

OEM
Original Equipment Manufacturer. Often manufacturers will produce versions of their products in large quantities for othern companies who either stick their name on them or use them as components for their systems. OEM products often make it to the retail sales arena where they are sold at lower prices. An OEM version of a card _may not_ be equivalent to the retail version.

operating system
The software that provides an interface between the hardware and the user.

PCI
Peripheral Components Interconnect. This is basically the Pentium equivalent to the VLB, but with improvements. It is a 64-bit standard, but is currently only implemented as 32 bits - look for 64 bit PCI in the future. It performs asynchronously to the main CPU, meaning that the PCI bus operates at 33 MHz regardless of the CPU clock. It also allows more than two devices on the bus, unlike VLB.

pixel
The smallest addressable display unit available at a given video addressability. There is no physical thing on a display that can be called a pixel. Pixels exist only in the graphics controller bitmap. The screen image in the bitmap is composed of an array of pixels, arranged in a rectilinear fashion, with the X axis running horizontally, perpendicular to the Y axis. A
pixel consists of intensity only (in grayscale monitors) or colour and intensity information (red, green & blue in colour). While a pixel usually corresponds to a square or rectangular area, it is displayed as a number of spots on a CRT. One pixel usually consists of 1.2 or more dot triads. Flat panel displays are a special case where individual pixels correspond directly to a picture element on the display.

platform
Refers to different operating systems that run on different computers (ie. Mac OS, Windows 95, Unix etc)

RAM
Random Access Memory. RAM comes in different types, including DRAM (Dynamic RAM) and VRAM (Video RAM) among others. DRAM is used as main system memory, while both DRAM and VRAM can be used on graphics cards.

refresh rate
When referring to monitors, the number of times that the video card refreshes the entire screen in one second. Expressed in Hz (Hertz).

resolution
The most common misinterpretation of this term is that it is the same as pixel addressability. In fact, resolution is more closely related to dot pitch, since it is a limitation of the monitor rather than of the graphics controller. The resolution limits how small an object a monitor is able to display.

RGB
Red, Green and Blue. By varying the intensity of each of these colours in a single pixel, the human eye can be fooled into seeing a wide range of colours. For example, a combination of red and green appears as yellow, even though no light with a yellow wavelength is emanating from the screen. This works because the optical system integrates the photons striking a region on the retina, and the combined impulses from green and red sensitive cones are seen as yellow.

software
The programs that have been written for a computer (ie. Microsoft Word, Microsoft Windows 98 etc)

vertical refresh rate (vertical scan rate)
The number of fields (on an interlaced display) or frames (on a non-interlaced display) that are displayed in one second. A field or frame covers the entire screen area. This is measured in Hz (cycles per second). It is limited by the monitor and video card (pixel addressabilities and colour depths). Modern monitors and video cards provide refresh rates of 60Hz+.

VESA
Video Electronics Standards Association. This group has produced standards for the VLB (Vesa Local Bus), VESA SVGA video modes and standards for minimum screen refresh rates at various pixel addressabilities.

VGA
Video Graphics Array (IBM). Supports pixel addressabilities of up to 640x480x16. This is the de facto video standard and consists of a

number of video modes. It is still heavily supported by DOS-based applications and games.

video card

A dedicated piece of hardware which performs graphics operations. Also called a display adapter. Consists of microchips and other electronic components mounted on a pc-board which connects into a slot (ISA, EISA, MCA, VLB or PCI) on the motherboard.

viewable area

Typically monitors are advertised by the diagonal size of the picture tube in inches. Common sizes are 14", 15", 17", 20"+. However, the amount of the screen that can be seen is usually less. For example, most 17" monitors have only a 15.5" diagonal area used for display, in part because the actual phosphor area is only about 16" due to the glass thickness. This is partially due to the fact that the monitor's case covers the edge of the tube, and partially because monitor manufacturers want to make you think you're getting a larger display than you are.

VLB

VESA Local Bus. This 32 bit bus was originally designed to provide higher bandwidth for video cards than is available with the ISA bus. It is optimized for the 486 CPU and can run at speeds up to 40 MHz with one card on the bus, or up to 33 MHz with two cards on the bus. The speed of the VLB is dependent, and runs synchronously with, the main system CPU. Some VLB cards are not designed to run faster than 33 MHz, though some mother- boards will clock the bus at up to 50 MHz! VLB 2.0 has been written, but has not been implemented on many 486 motherboards.

VRAM

Video Random Access Memory. A specialized type of DRAM, VRAM is dual-ported, meaning it can be read from and written to at the same time. see "What is the difference between VRAM and DRAM?"

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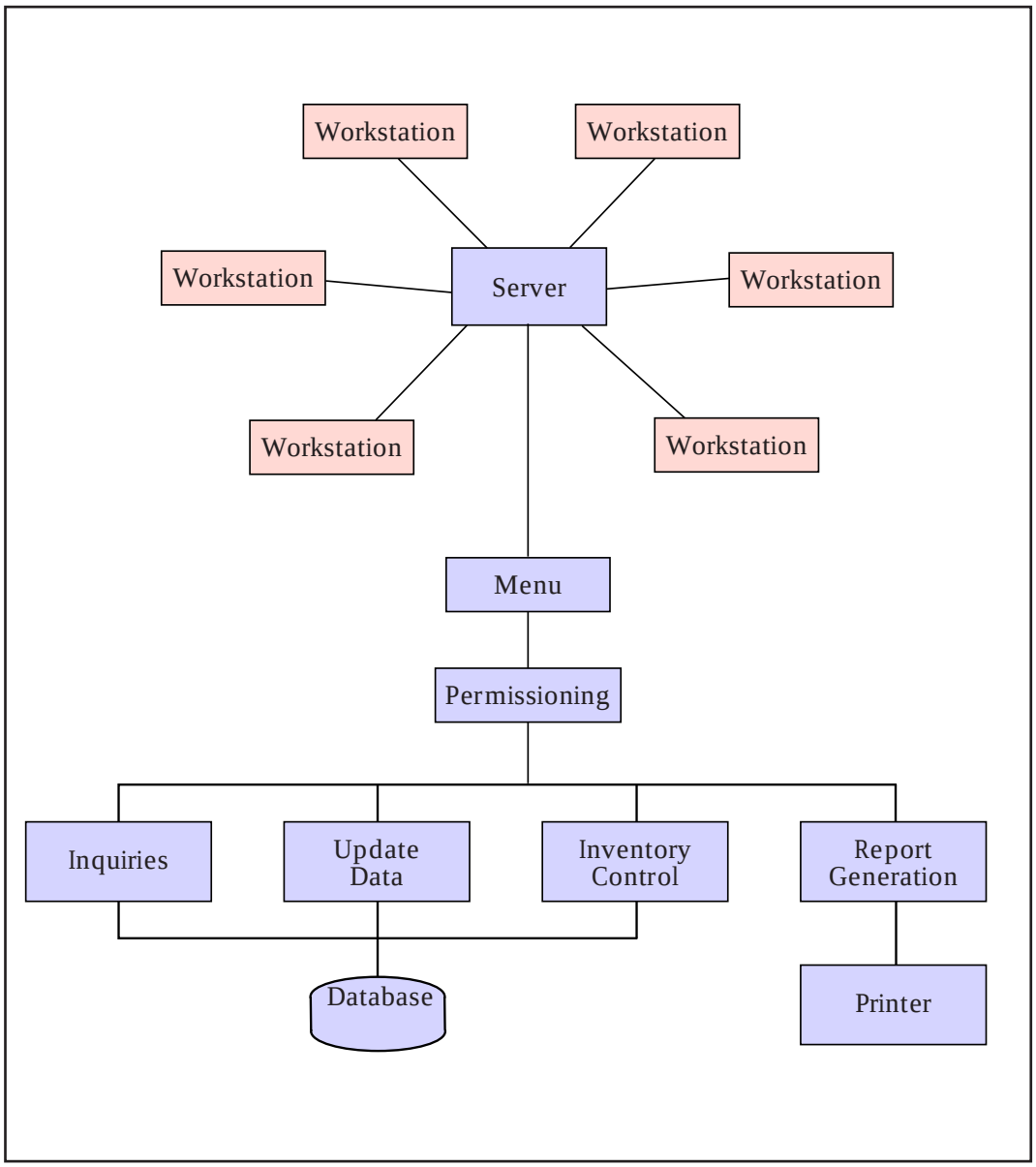
Functional Specifications

CONTENTS OF FUNCTIONAL SPECIFICATIONS

System overview 29
Major Objectives 30
Special System Requirements 31
Component Descriptions 32
Other Deliverables 33
Specification Changes 33
Acceptance 33
User and Project Team Interfaces 34
Users Responsibilities 34
Terms, Conditions and Assumptions 34

SYSTEM OVERVIEW

This system includes a number of computers linked together, forming a Local Area Network (LAN), allowing them to communicate with each other (and share information). There will be a central computer (server) which controls the network. This system will handle registration, finance, auditing, and management information. Privileged data will only be accessible by authorised personnel. Many repetitive tasks will be automated, thus reducing the time it takes to do these tasks.



MAJOR OBJECTIVES

The rollout of the LAN at the club will involve deployment of 6 desktop computers by the end of the agreed period. Most of these desktop computers will reside in the club's main area, which includes the administration area and bar, and the other will reside in the Golf Shop.

The storage, organisation and gathering of data is a necessity. Information will be easily and quickly generated and solutions to problems such as low stock or late subscriptions picked up automatically. With the customised software, users will be able to run databases side by side with word-processing, and electronic-mail without delays or shutdowns. Users will get an immediate response after launching complex queries against the databases. Snails Pace Sporting Club can be sure that running many applications side by side, for example, routinely using Microsoft Excel, Microsoft Project, Microsoft Outlook Express, and Organiser simultaneously, will result in a smooth efficiently run organisation. The benefits of such a robust environment can extend to users and club members alike. The less confusion and better use of IT resources, the fewer the mistakes made, and the more time the club will have for other work and growth.

The major objectives can be broken down into 4 areas:
Inquiry, Update, Inventory Control, and Report Generation.

Inquiry

This will allow an immediate response to questions such as membership, bookings, events etc. An example of this may be: "Can I book a game of tennis for this evening?"

Update

This will automatically update (among other things) membership subscriptions, bookings, staff and members' personal profiles etc.

Inventory Control

A stock inventory system will incorporate a till which can automatically control cash transactions and stock control. As stock drops below a certain level, the system will indicate this to the stock controller.

Report Generation

Detailed reports will be able to be generated on a regular basis. These reports will follow a preset format, thus reducing the time it currently takes to generate such reports.

SPECIAL SYSTEM REQUIREMENTS

There are several special requirements that Snails Pace Sporting Club have stipulated in the requirements document. They are:

- user friendliness
- security
- compatibility, and
- reliability.

Below is an elaboration of these points.

User friendliness

Seeing as the majority of staff at Snails Pace Sporting Club have had little exposure to computers, the interfaces on all of the applications will follow the same format. Similarly, where applicable, there will be menu driven interfaces.

Security

Priviliged information on the network will accessible by authorised personnel only. This priviliged information will be password protected.

Compatibility

All applications will be industry standard, "off the shelf" software. All computers will use the same operating system. This will allow for reliable file sharing between the networked computers at Snails Pace Sporting Club.

Reliablity

- Uptime of the system is expected to be 93%
- Mean Time Between Failures (MTBF) is expected to be 500,000 hours.
- Mean Time To Repair (MTTR) is expected to be 1 hour.

Till machines will be able to process the maximum requirement of 60 transactions per hour. Till machines and database system will run for the maximum requirement of 13 hours per day (9am-10pm). Management information is accessible for the maximum requirement of up to 400 times a day.

Anticipating member growth of 20 percent each year, the management information system is expected to function for 8 years with continued upgrades as technology improves.

COMPONENT DESCRIPTIONS

Inquiry

- Registration screen output
- Bookings screen output
- Golf shop screen output
- General screen output
- Entertainment screen output/report/brochures/flyers etc
- Events screen output/report/brochures/flyers etc
- Bar screen output/report
- Financial report printout

Update

- Membership screen output/report/mail merge
- Staff and member profiles screen output/report
- Events screen output/report/file output
- Entertainment screen output/report/file output
- Finance screen output/report/file output

Inventory Control

- Foodstuffs screen output/report/file output/order requisitions
- Auditing screen output/report/file output/
- Stationery screen output/report/file output/order requisitions
- Sports equipment screen output/report/file output/order requisitions
- Maintenance resources screen output/report/file output/order requisitions

Report generation

- Monthly reports to the board (new members, old members, staff, sales etc) document printout
- Weekly wages report & information to the accountant document printout
- Reports on demand to staff document prinout

OTHER DELIVERABLES

The following documentation will be provided:

Hardware (Technical and User)
• Network (NIC, Cabling specs etc) • Server • Workstations • Printers & Peripherals
Software (Proprietary)
Operating Systems • Server OS • Workstation OS *Application Software* • Microsoft Office • MYOB • Microsoft Access
Software (Customised)
• Database (designed by ForwardPIP Solutionists)

All of the user guides above will be used during the training sessions provided by ForwardPIP Solutionists. Training will start before the completion of the project, thus enabling the operators to already be efficient at using the system by the final completion date of the project.

SPECIFICATION CHANGES

This project is based upon all that is laid out and agreed upon within the requirements document. Any deviation from the requirements document will be viewed as addition work and will be chargeable.

ACCEPTANCE

There will be an acceptance test plan in the form of a checklist to be signed by Snails Pace Sporting Club at the completion of each milestone to ensure acceptance by Snails Pace Sporting Club. In signing the acceptance checklist, Snails Pace Sporting Club acknowledges that every requirement has been met. In signing this

functional specification, Snails Pace Sporting Club acknowledges that it agrees to this acceptance method.

The completion of the project will mark the final milestone. At this point Snails Pace Sporting Club will pay ForwardPIP Solutionists the remainder of the balance due.

USER AND PROJECT TEAM INTERFACES

Snails Pace Sporting Club will assign a member of it's staff to act as a representative in order to communicate to the project team on both a technical and managerial level. This person needs to be available throughout the full duration of the project. This person must know the business well and have the authority to make the decisions for every department that the system will affect. This person needs to answer questions regarding to issues including budgets, schedules, major changes, people problems etc.

USER'S RESPONSIBILITIES

Snails Pace Sporting Club agrees to make available any relevant documentation that will assist in the development of the project. Snails Pace Sporting Club also agrees to assist the project team in any way that the project team deems necessary in order to save time and money.

TERMS, CONDITIONS AND ASSUMPTIONS

The '"Agreement" is made between Snails Pace Sporting Club and ForwardPIP Solutionists. All products will be sold as NEW with a manufacturers warranty. Warranty claims on these products will be made to ForwardPIP Solutionists. The club must be satisfied with the service delivery and availability, and contingency plans prior to the transfer of the purposed plan to the club. ForwardPIP Solutionists is responsible or liable for loss or resulting damage to the club due to negligence or theft. The payment arrangement will consist of an initial up front payment, with the second payment being made when the work has been successfully completed and tested.

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Appendix A

Requirements Document for Snails Pace Sporting Club

CONTENTS

The Project Team
About ForwardPIP Solutionists 37
Analysis of given Scenario 37
Requirements Document
Overview of the club 37
Major Problem 37
Project Goals 38
Major Functions 39
General Outputs 39
General Information Inputs 40
Performance 40
Growth 40
Operation and Environment 40
Compatibility, Interfaces 41
Reliability, Availability 41
Human Interface 41
Organisational Impact 42
Maintenance and Support 43
Documentation and Training 44
Terms and Conditions 44

THE PROJECT TEAM

About ForwardPIP solutionists

ForwardPIP Solutionists comprises of a group of three. Peter Smith, Ian Dickson, Teddy Atmaja. The group created a company called ForwardPIP Solutionists.

Analysis of given Scenario

ForwardPIP Solutionists has been offered the opportunity to provide a Requirements Document for Snails Pace Sporting Club. This Requirements Document will form the basis of a request for tender that will be used by an I.T. project team to suggest a proposal, and ultimately, implement an I.T. solution.

The successful project team will implement a solution that will better improve the present inefficient and unreliable working environment of the Snails Pace Sporting Club. The solution will also provide better allocations of services and improve both the possible financial rewards whilst creating a more efficient working program.

It is ForwardPIP Solutionists intention to submit a proposal based on the following Requirements Document.

REQUIREMENTS DOCUMENT

Introduction

Overview: Snail's Pace Sporting Club is located in a small town with a growing population. The number of members is estimated to be between 100 and 150. Member growth is limited at present. The club provides tennis courts, a bowling club, golf driving range, and golf greens. Besides all of these sporting facilities, the club also provides a bar for members who like to socialise. People who want to use any of the sporting facilities can make a booking over the telephone or drop in depending on how busy the club is on those days. There are currently 12 staff. Most of the staff are not computer literate, and none of the staff are currently expected to be. There is a good public relations profile between the members and staff, thus giving the club a "family" atmosphere. This family atmosphere is considered to be an important part of the club that the staff and members wish to preserve.

Major Problem: Snail Pace Sporting club has a very backward way of doing things. In order to be competitive and in order to grow, they

need to adapt modern day methods of running the business.

There are many times when the facilities are not being used, even though they are (apparently) fully booked. This is due to the bookings being incorrectly stored.

The stock ordering/inventory system is another problem. At any one time the is no accurate idea of what stock is available in any given area of the club. Many hours are spent collating what stock the club already has so that they can identify what stock is required. The inability to track the turnaround of this stock further contributes to the problem.

The distribution and retrieval of managerial / administrative information is erratic. Paper is passed from person to person before it is finally implement or stored.

Member growth is limited at present, due to the inefficient and unreliable working system employed by the club at present.

Also, lack of maintenance spent on the golf course makes it unappealing and as a result undervalued as an important facility within the club . The poor state of the course makes it harder to play golf and, therefore each round takes longer for people to finish then it should. The booking method makes it hard for staff to get messages relayed reliably to those people responsible for the control of these sporting areas.

Lack of communication.

Project Goals
Replace the existing manual system at Snails Pace with an automated one that handles:

Booking system for sporting and social activities, that is reliable.
Stock inventory system incorporating a till, for easy, reliable organisation of stocktaking, ordering, and booking.
Bar system that tracks total drinks, and therefore calculates total profit/loss, and guards against dishonest practices from bar staff.
Membership database for registration that is fast, easy and reliable.
Financial System that produces accurate monthly reports on time, and

provides a means for fast and accurate accounting.
Staff scheduling system that informs staff of daily job requirements.
Information Management for better priority listing of things on request.
Improved communication.

In essence, a system that can run the finances, accounts, receivables, payables, inventory control is needed, along with a personnel system to handle the payroll, taxes, in-house correspondence, and membership.

Major Functions

Booking system that is reliable. Users must be able to see at a glance whether facilities are available or not. Ability to add and alter booking information as required.
Stock inventory system incorporating a till which can automatically control cash transactions and stock control. As purchases are made, or goods are used, it must be able to combine stock control/turnover with auditing. This system will need to be applied to the bar area, the administration area, and the sports area.
Bar system incorporating automated drink dispensers and computerised tills.
Membership registration with the ability to perform mail merges from queries based on any given criteria.
Financial system that processes Accounts Receivables, wages, sales, membership fees.
Staff scheduling system that can be accessed by all staff and will be updated on demand.
Information Management that can give access for the ground staff to prioritise tasks to be done on that day.
A communication system that is speedy, reliable, and efficient. Such a system will also allow messages to be stored for later reference.

General Outputs

Monthly reports to the board (new members, old members, staff, sales etc).
Weekly wages report & information to the accountant.
Reports on demand to staff.
Monthly balance sheet to the accountant (profit/loss statements).
Bookings schedule to sporting and administrative staff.
Mail merges to members (club news, renewals etc).

Cheques to suppliers (for bills).
Correspondence to suppliers.
Invitations for events to members & staff.
Stock order sheet to the stock controller.
Request list on tasks to be done each week to staff.
Competition results to staff and members.
Order sheet to the stock controller.

General Information Inputs
Hours worked daily from department supervisors, and administrative staff.
Booking information from administrative staff.
Event information from management/administrative staff.
Daily takings from supervisors/administrative staff.
Invoices from suppliers.
Stock turnaround from supervisors.
Daily job requirements from supervisors/administrative staff.
Monthly board meeting minutes from secretary.
Updates to the membership list from administration staff.

Performance
During peak times till machine needs to be able to process 60 transactions per hour. Till machines and database system is expected to run for 13 hours per day (9am-10pm).
Management information is accessed up to 400 times a day and is required to run for 8 hours (working hours).

Growth
Anticipating member growth of 20 percent each year, the management information system is expected to function for 8 years with continued upgrades as technology improves.

Operation and Environment
The main server, which will feed the computers in the club will need to be located in a room which has a reasonable degree of ventilation and is secured from unauthorised personnel.

6 Workstations will be located as follows:

2 in the secretarial office (for the secretary, and the accountant)
1 in the head grounds person's office

1 in the manager's office
1 in the bar (for the head bar person)
1 in the Golf Club

All PC's will need a logon and password to be entered before any access to data is permitted.

Compatibility, Interfaces

Applications to be industry standard.
All software will be "off the shelf" software (ie. no custom written programmes will be necessary.
All computers will use the same platform.
Each computer will be able to communicate with any/all of the others.
The server will host applications and data that can be accessed from any workstation by anyone with the required privileges.
There will be one database system to drive the different interfaces for each department.

Reliability, Availability

Uptime is expected to be 93%
Mean Time Between Failures (MTBF) is expected to be 500,000 hours.
Mean Time To Repair (MTTR) is expected to be 1 hour.

Human Interface

The level of computer literacy required by this solution will vary, depending on the particular staff member's duties. Some staff need not be familiar with a computer at all, whilst other members will need to be familiar with industry standard application software for their particular area.

The following specialised skills will be required:
Secretary:
word processing, email, database application
Accountant:
small business accounting software, spreadsheet, email, database application
Manager:
word processing, email, database application
Bar Manager:
word processing, email, database application

Head Groundsperson:
word processing, email, database application

There will be online help available to all users.
Some tasks will be menu driven. This will include tasks that are common to the whole club (ie. daily timesheets, workloads etc).

Organisational Impact
All areas will be affected as there are currently no computers in the club at all.

Office
The office area will see the biggest change with the manual filing system changing entirely to a computer based system. This will require much less writing and more data entry. All registration and bookings will be entered into the computer system. Staff scheduling and stock control will also be computer administered. Letters to members and reports for staff will be generated using the information that the system holds on it's databases. A financial system will process accounts receivables, wages, sales and membership fees.

Bar
The staff in the bar area will no longer need to manually calculate finances and stock control. This will be done automatically by the stock inventory system linked to the till. Introduction of post mix dispensers behind the bar will replace the slower, manual method of pouring drinks. An automatic cash register that automatically calculates the drink prices will replace the old fashioned till that is only designed for putting in totals and giving change.

Sporting area
The sporting area will have it's bookings stored centrally, and an information management system will be implemented to allow the ground staff to prioritise daily tasks with more ease.

There may be an initial period of uncertainty from some staff, but with proper training and sufficient learning time, everyday tasks will be accomplished with less effort, much more speed, and more accurately than ever before. There will be some tasks that remain unchanged such as the interaction with members, grounds maintenance, and phone bookings. Other tasks will be interfaced with the new system

such as daily task scheduling, stock control, auditing, and member registration.

It has been noted that certain staff members may resign from Snails Pace if they are forced to use a computer. These members should be made aware of the trends throughout the world and that using a computer is no longer a task only reserved for the technically minded. There are many people who have reluctantly adapted to using a computer in the workplace only to find that their job is much easier than they'd ever imagined.

Maintenance and Support

It is a requirement that any problems with the system in the first year, will be corrected within 24 hours of the problem being notified to the successful tendering company.

The successful tendering company will need to provide a warranty stating that the hardware systems included in their solution and the software they design will be free from defects in material and/or workmanship for the following periods:

Hardware
One (1) year
Proprietry Software
One (1) year
Any Customised Software
One (1) year

During the warranty period, the successful tendering company will correct any defects in material or workmanship, or any failure of the IT solution product to conform to specifications, at no charge for labour and materials. Any replacement part or product shall be new or serviceably used and is warranted for the remainder of the original warranty period. Any further support for the system after the agreed period of warranty has expired will be evaluated by the stability, reliability, usefulness, and satisfaction with the present service. Responsibility for the provision of all documentation and training in further developing the service that is installed shall be provided as part of the I.T. solution. Documents for Users, Operators, and System Maintainers needs to be provided. If specially designed software applications are recommended then training will also be required.

Documentation and Training

Documentation containing operating instructions for the hardware and the software needs to be provided. Fundamental training on all application/customised software as well as the operating system is also required for the existing staff.

Terms and Conditions

The "'Agreement" is made between Snails Pace Sporting Club and the successful tendering company.

All products are to be sold as NEW with a manufacturers warranty. Warranty claims on these products will be made to the successful tendering company.

Snails Pace Sporting Club must be satisfied with the service delivery and availability, and contingency plans prior to the transfer of the purposed plan to the club.

The successful tendering company is responsible or liable for loss or resulting damage to the club due to negligence or theft.

The payment arrangement will generally consist of an initial up front payment, with the second payment made when the work has been successfully completed and tested.

All tenders must be submitted by no later than Midday 16 June 1999.

The successful company will be notified in writing one (1) month later. Selection will be awarded to the tender/solution that best fits our requirements and price.

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Appendix B

Feasibility Decision

FEASIBILITY DECISION

Based on the requirements document signed by Snails Pace Sporting Club, we deem this project to be feasible. Below is a list of the costs involved, the type of installation required and its benefits.

As the Snails Pace solution will consist of more than five machines, and the staff will be constantly sharing files and accessing a database, a client/server network (as opposed to a Peer to Peer network) will be necessary from the start.

The client/server network will require an investment in software, hardware and installation. A client/server network also requires a system (the server) dedicated to handling all network functions such as print queues and file access, and a hub and network interface cards. A cable is run from each system NIC (the client) to the hub, which is connected to the file server. Each NIC has an assigned address, so the file server knows which computer is making a request and can send the appropriate command or data. The software that keeps track of all of these operations is a Network Operating System, or NOS, such as Microsoft Windows NT or Novell Netware.

Seeing as Snails Pace Sporting Club's staff are generally not computer literate, it was decided that they should use industry standard products (such as Microsoft) so as to eliminate/minimise incompatibility issues, and to keep a smooth transition between different application software. Such software incorporates user friendly online support which is essential for inexperienced users.

It was deemed that Snails Pace Sporting Club's computer environment should not be multi-platformed at this stage, as there is no need for this, and it would also contribute towards incompatibility issues. Using Windows NT Server as a server operating system will enable easy upgrading to Microsoft Backoffice if/when the need arises. This will enable the club to take advantage of the increasingly sophisticated internet technologies, thus attracting more members to the club as well as keeping the existing ones happy.

The hardware and software listed on the following tables are readily available at the current time.

HARDWARE COSTS

Networking

Cat5 Cable, Patch Panel, Cabinet, Power points, Jacks, Jack boxes . . . . . *see contractor's quote (appendix F)*

7 - Ethernet Network Combo Cards 10Mb/100Mb, D-Link, DFE-530TX, PCI 10/100, NICs ($55.00 each) $385.00

1 - Ethernet Netgear, FE108, 10-port Hub $350.00

Server

1 - Pentium II 400MHz, 128 RAM, 10G Harddrive, 15" CRT Monitor, Keyboard & mouse $1,950

Backup

1 - Seagate 141 Internal SCSI Kit (Tape Drive) $579.00

5 - Seagate Drive Tapes ($51.80 each) $259.00

Workstations

6 - Pentium II 400MHz, 128 RAM, 3G Harddrive, 15" CRT Monitor, Keyboard & mouse ($1,850 each) $11,100

3 - Natsoft tills ($1795.00 each) $5,385

Printer & Peripherals

1 - Lexmark Optra E310 (Laser Printer) $610.00

Total Hardware Cost $20,618

SOFTWARE COSTS (INCLUDING LICENCES)

Server Operating System

Windows NT Server ($1199.00 + $469.00) $1668.00

Workstation Operating System

Windows NT Workstation $469.00 X 6 Licences $2814.00

Microsoft Office 97 which includes Access Excel and Word (Purchase Works at $99.00 and upgrade to Office 97 at $499.00) ($598 X 6) $3588.00

MYOB Pro (accounting software) $475.00

Microsoft Exchange Server 4 ($1649.00 +$110.00) . . .$1759.00

Norton System Works $175.00

Natsoft POS (till software) . . . . . .(included with hardware)

Back up Tape Drive software $519.00

Total Software Cost $10,998.00

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Appendix C

Potential Risks & Data Analysis

OUTLINE OF POTENTIAL RISK FACTORS THAT HAVE BEEN ANTICIPATED

SNAILS PACE SPORTING CLUB

Risk 1: Snails Pace may not have enough funds for the project.

Solution 1: There will be an initial upfront payment for the purchase of the software and hardware from Snails Pace Sporting Club. Snails Pace Sporting Club will be legally obliged to compensate us for any payment due, in the event that they cancel the project before it's completion.

Risk 2: Snails Pace Sporting Club may be unrealistic in their expectations of what a computerised solution can deliver.

Solution 2: Snails Pace Sporting Club has already signed a requirements document that outlines the specific problems to be dealt with, and lists all of the solutions required.

Risk 3: The staff at Snails Pace Sporting Club are reluctant to accept the solution.

Solution 3: ForwardPIP Solutionists will propose a user friendly solution and provide professional training in order to make transition to the system as smooth and undaunting as possible.

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Risk 1: We have had limited experience with accounting software packages.

Solution 1: We can allocate one member of ForwardPIP Solutionists to research at least three accounting software packages.

Risk 2: The data/electrical contractor may not be able to fulfil our installation requirements.

Solution 2: We will use a reputable contractor in which we have had dealings with before. There will also be a clause written into the contract outlining the penalties involved in the event of the contractor not fulfiling all of the requirements of the contract within the time frame specified.

Risk 3: This project may be too big for ForwardPIP Solutionists to deal with.

Solution 3: ForwardPIP Solutionists has successfully completed projects of a similar size and scope in the past.

Risk 4: Staff may leave ForwardPIP Solutionists.

Solution 4: Reliable and accurate documentation will be kept by each team member for each phase that they are responsible for.

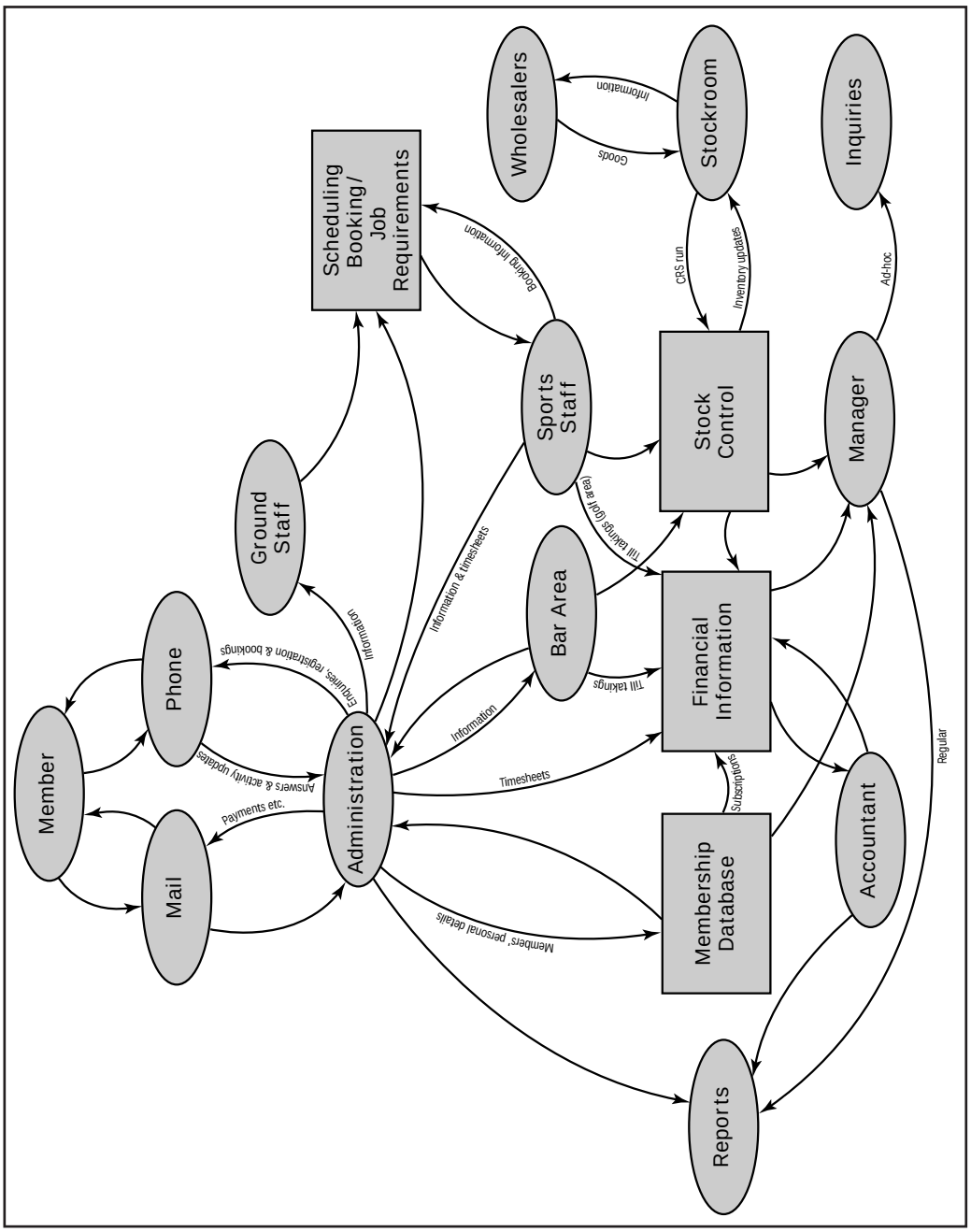
Risk 5: Unforeseen problems occur that were not evident at the start of the project.

Solution 5: Regular meetings and updates on the progression of the

project will be scheduled on a regular basis to identify possible problems.

ANALYSIS OF DATA

This Yourdon chart shows the flow of information and data within Snails Pace Sporting Club.



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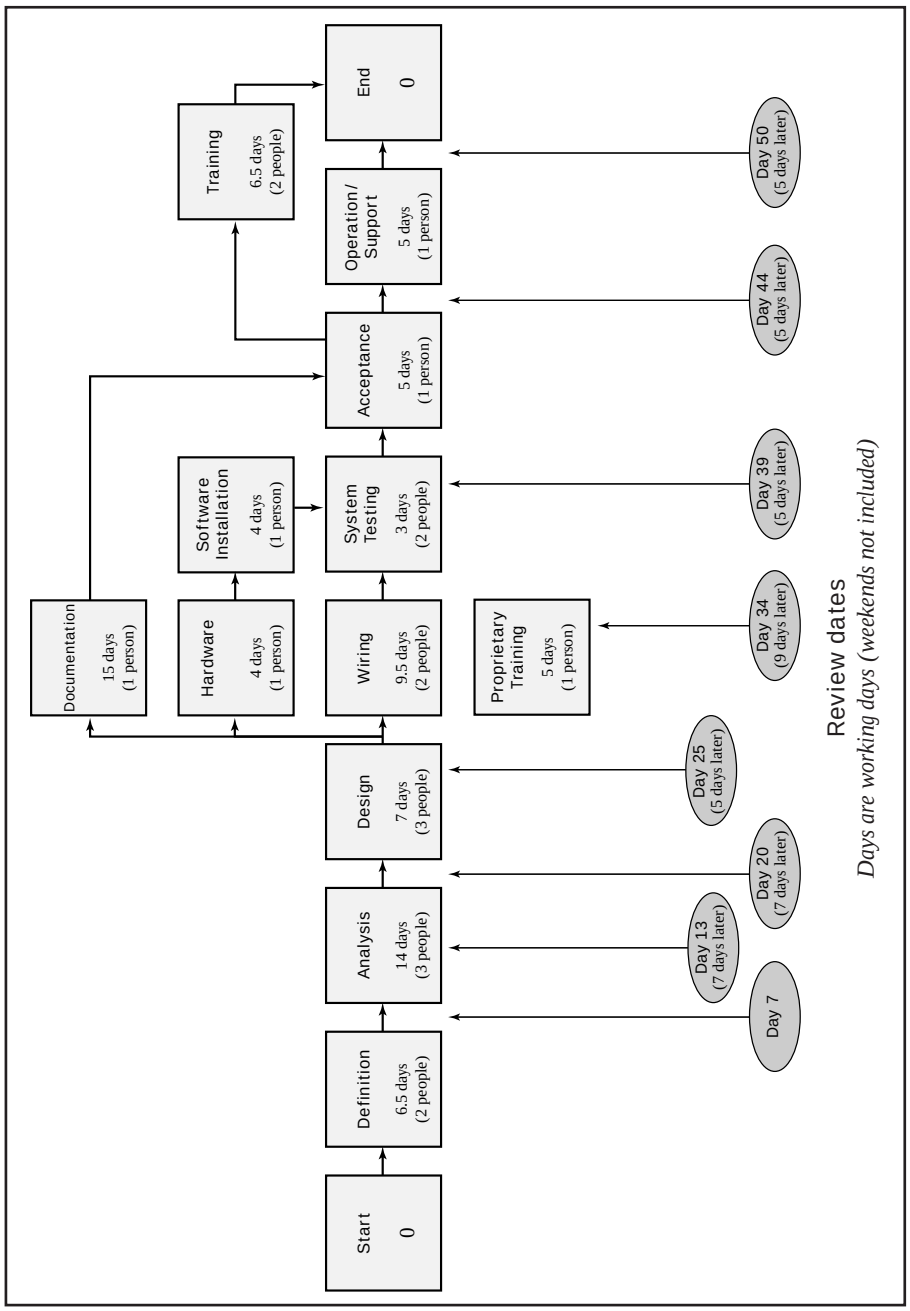
Appendix D

Preliminary Project Plan

PRELIMINARY PROJECT PLAN

Preliminary Project Plan reviews will be held at regular intervals in order to keep a check on the schedule and to reveal any problems that may be occurring. Each member of the project team will give information on their particular area.

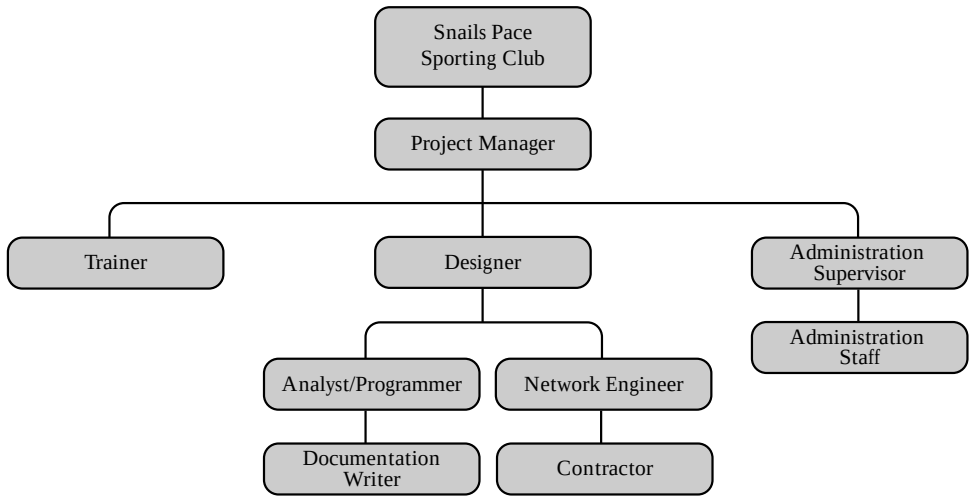
The Pert chart below shows the scheduling of the reviews.



PROJECT TEAM

The project team is based on the following structure:

Project Team Organisational Chart



POSITION	REPORTS TO:	COMMUNICATES WITH:
Project Manager	Snails Pace	Designer, Trainer, Analyst/Programmer, Admin Supervisor, Admin Staff, Network Engineer, Contractor
Designer	Project Manager	Analyst/Programmer, Trainer, Network Engineer, Documentation Writer, Admin Supervisor
Analyst/Programmer	Designer	Designer, Project Manager, Trainer, Admin Supervisor
Trainer	Project Manager	Project Manager, Analyst/Programmers, Admin Supervisor
Network Engineer	Designer	Designer, Project Manager, Analyst/Programmer, Admin Supervisor
Contractor	Network Engineer	Network Engineer
Documentation Writer	Analyst/Programmer	Analyst/Programmer, Designer, Admin Supervisor
Admin Supervisor	Project Manager	Project Manager, Designer, Analyst Programmer, Trainer, Network Engineer, Documentation Writer, Admin Staff
Admin Staff	Admin Supervisor	Admin Supervisor, Project Manager

PROJECT COST

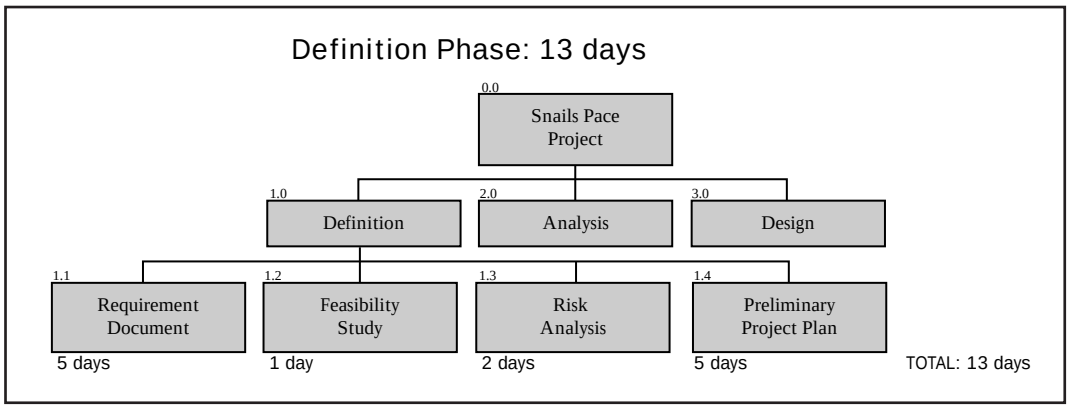
Labour charged at $500.00 per day includes profit.

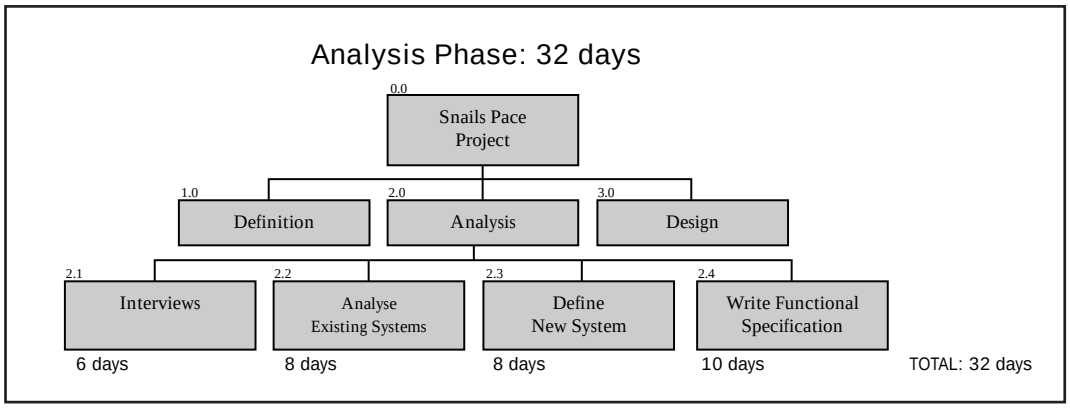
Labour (117 X $500.00) $58,500.00
Contractor $2,575.00
Risk Factor @10% $6107.50
Total Labour $67182.50

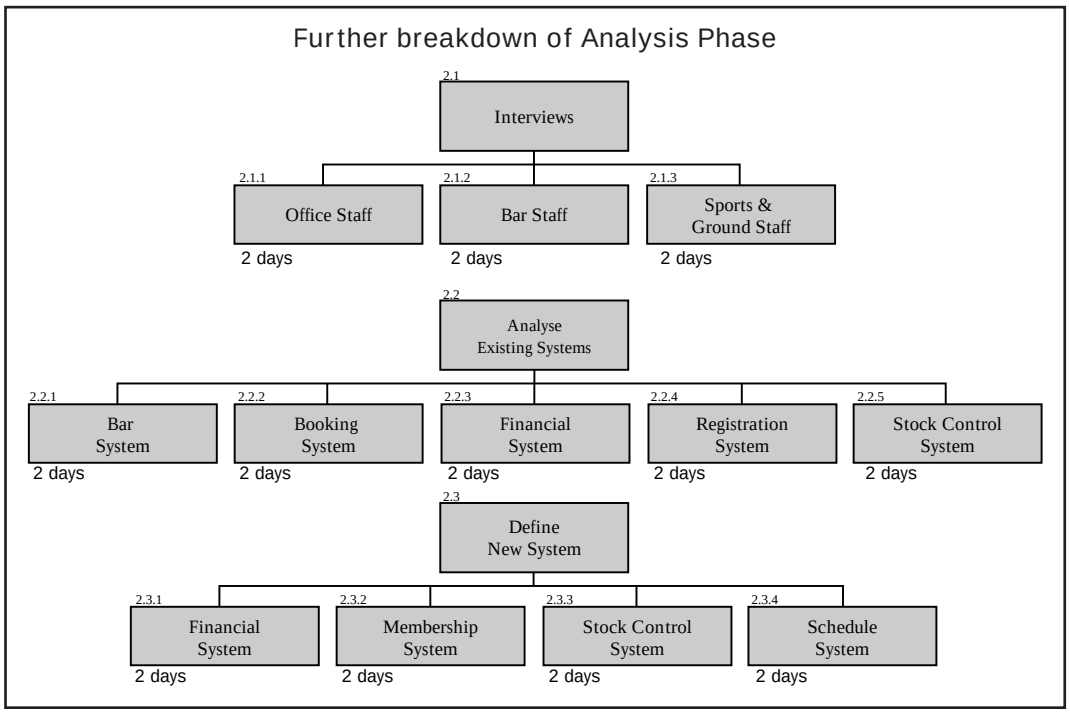
Total Hardware $20,618.00
Total Software (including licences) $10,998.00

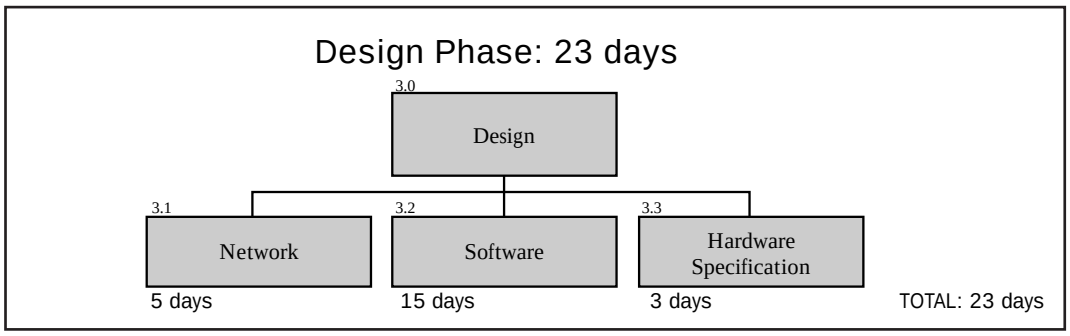
TOTAL COST OF PROJECT $98,798.50

The following charts show a detailed breakdown of the costs involved. The WBS charts show the labour cost breakdowns. The HW/SW charts show the hardware and software costs.






Further breakdown of Analysis Phase
2.1
Interviews
2.1.1
Office Staff
2 days
2.1.2
Bar Staff
2 days
2.1.3
Sports & Ground Staff
2 days
2.2
Analyse Existing Systems
2.2.1
Bar System
2 days
2.2.2
Booking System
2 days
2.2.3
Financial System
2 days
2.2.4
Registration System
2 days
2.2.5
Stock Control System
2 days
2.3
Define New System
2.3.1
Financial System
2 days
2.3.2
Membership System
2 days
2.3.3
Stock Control System
2 days
2.3.4
Schedule System
2 days


Design Phase: 23 days
3.0
Design
3.1
Network
5 days
3.2
Software
15 days
3.3
Hardware Specification
3 days
TOTAL: 23 days

HARDWARE COSTS

Networking

Cat5 Cable, Patch Panel, Cabinet, Power points, Jacks, Jack boxes . . . . . .(included in contractor's quote)

7 - Ethernet Network Combo Cards
10Mb and 100Mb, D-Link, DFE-530TX, PCI 10/100, NICs ($55.00 each) $385.00

1 - Ethernet Netgear, FE108, 10-port Hub $350.00

Server

1 - Pentium 350MHz, 128 RAM, 10G Harddrive, 15" CRT Monitor, Keyboard & mouse $1,950

Backup

1 - Seagate 141 Internal SCSI Kit (Tape Drive) $579.00

5 - Seagate Drive Tapes ($51.80 each) $259.00

Workstations

6 - Pentium 350MHz, 128 RAM, 3G Harddrive, 15" CRT Monitor, Keyboard & mouse ($1,850 each) $11,100

3 - Natsoft tills ($1795.00 each) $5,385

Printer & Peripherals

1 - Lexmark Optra E310 (Laser Printer) $610.00

Total Hardware Cost $20,618

SOFTWARE COSTS (INCLUDING LICENCES)

Server Operating System

Windows NT Server ($1199.00 + $469.00) $1668.00

Workstation Operating System

Windows NT Workstation $469.00 X 6 Licences $2814.00

Office 97 Which includes Access Excel and Word
(Purchase Works at $99.00
and upgrade to Office 97 at $499.00)
($598 X 6) $3588.00

MYOB Pro (accounting software) $475.00

Microsoft Exchange Server 4 ($1649.00 +$110.00) . . .$1759.00

Norton System Works $175.00

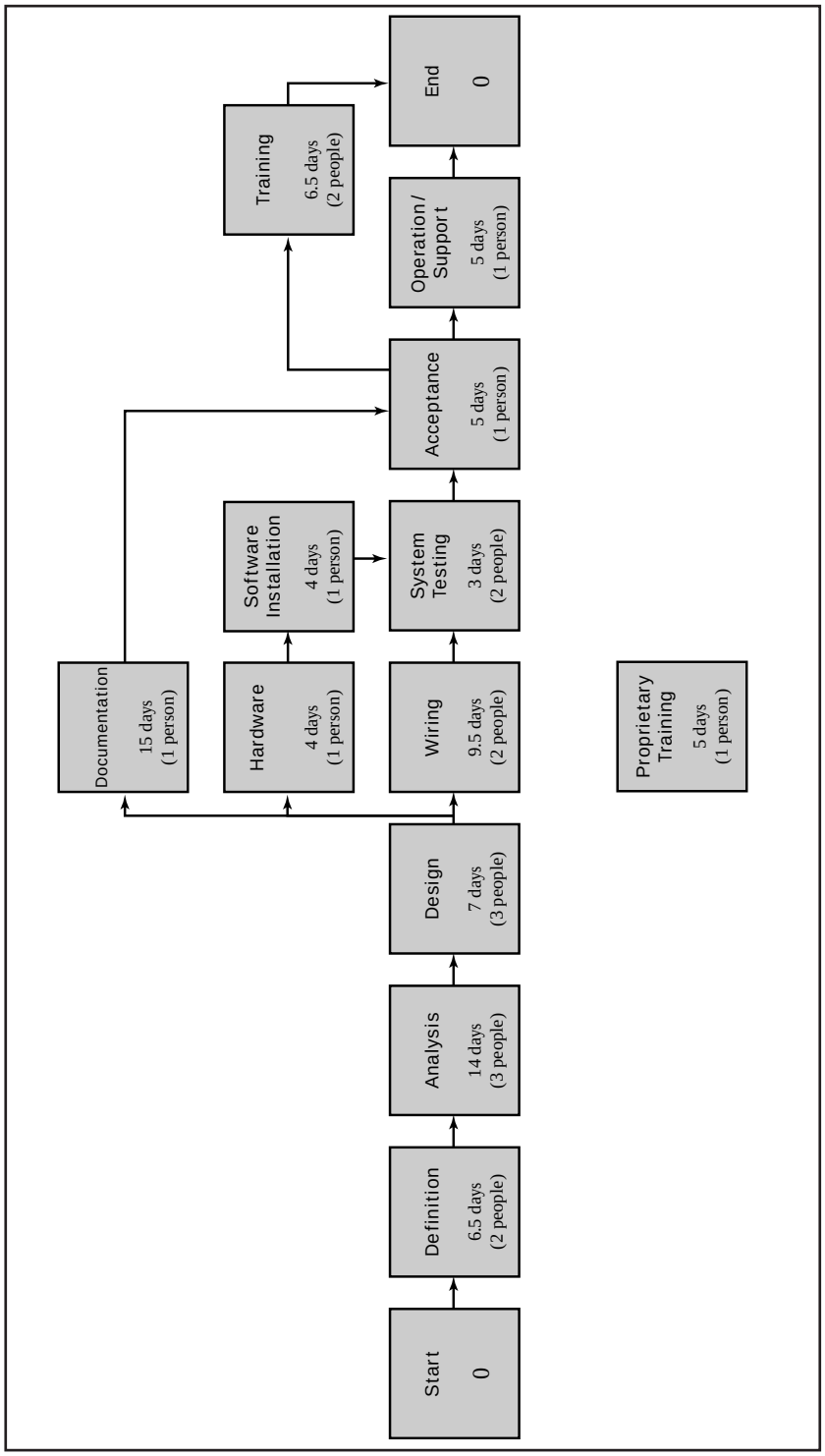
Natsoft POS (till software)

Back up Tape Drive software $519.00

Total Software Cost $10,998.00

PROJECT SCHEDULE

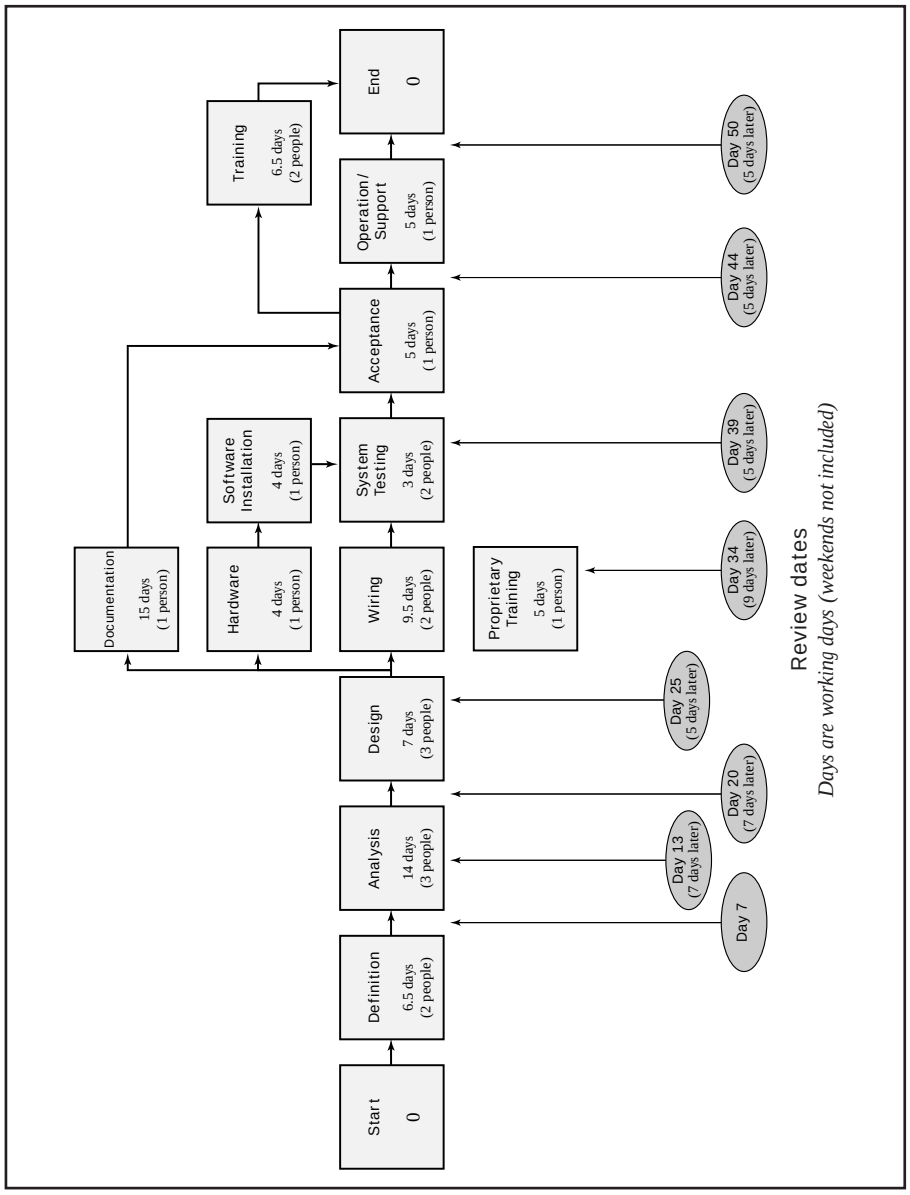
This Pert chart shows the duration of each of the 7 phases of the project.



REVIEWS

Review meetings will be held at regular intervals in order to keep a check on the schedule and to reveal any problems that may be occurring. These review meetings will be held just before the end of each milestone so that if there are any problems, they can be rectified before the completion of the particular milestone. Each member of the PT will give a report on their particular area.

The Pert chart below shows the scheduling of the review meetings.



REPORTS

At the end of each milestone after the reviews have been completed, a new report will be generated to document the project's overall progress, the state of the budget, and any problems encountered along with any new decisions or alterations to the project. This information will be extracted from the minutes of the review meeting and the individual progress report from the person who is responsible for the particular phase.

DOCUMENTATION

Documentation containing operating instructions for the hardware and the software will be provided by ForwardPIP Solutionists. Fundamental training on all software will be provided for the existing staff. The hardware and software has been categorised into the following structure:

Hardware (Technical and User)
• Network (NIC, Cabling specs etc) • Server • Workstations • Printers & Peripherals
Software (Proprietary)
Operating Systems • Server OS • Workstation OS *Application Software* • Microsoft Office • MYOB • Microsoft Access
Software (Customised)
• Database (designed by ForwardPIP Solutionists)

7. ASSUMPTIONS

This project is based upon all that is laid out and agreed upon within the requirements document. Any deviation from the requirements document will be viewed as additional work and will be chargeable.

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Appendix E

Gathering of information for the Requirements Document

FORWARDPIP SOLUTIONISTS: DIVISION OF INDIVIDUAL RESPONSIBILITIES

ForwardPIP Solutionists has decided to distribute the various sections of the club between themselves. Meeting frequently to discuss all that has been discovered and to combine the finding, to create an overview of what is required.

Snails Pace Sporting Club has been grouped into three sections. Each section, being the responsibility of one member of the team. These being;

Ian Dickson - Management and Administration
- Manager - Hector Dare
- Secretary - Olive Vetti
- Accountant - Brenda Beans
- Head Honcho - Head Honcho

Teddy Atmaja - Sporting resources and Ground staff
- Golf Club - Paul Partoo
- Tennis - Olive Vetti
- Head Groundsperson - Herb Grose
- Junior Groundsperson - Hal Lusin-Nate
- Labour - Bindi Brown

Peter Smith - The Public Bar Area
- Head Barman - Mart Ini
- Casual Staff - Carl Ini
- Casual Staff - Jim Bean
- Casual Staff - Chardonnay Smirnoff

QUESTIONS

Head Honcho

1) What do you believe the club members need from from the club that they are not getting now?

2) What are the club's expansion goals with regard to:
    a) Member numbers?
    b) Constructional Expansion?

3) Would you be interested in establishing a web presence? If so, to what extent? (A web site can start at 1 or 2 pages advertising the club, and grow over time to many pages incorporating online fee payments, a mailing list to keep customers informed of upcoming events/functions, and many other services).

4) What are your thoughts on networking your resources (ie. using Pauls golf lesson business to introduce new members to your club)?

5) It's been implied that one or more members of the staff have been working at home. Would you like them to be able to access data and communicate remotely?

6) What methods would you like to use for promoting the club? ie. brochures, newsletters, discount vouchers, internet, electronic mailing list (email), conventional mailing list.

7) Does the club have any special legal requirements that we will need to take into consideration?

8) Why is it so difficult to join as a member?
9) There has been concern from some staff that a computerised system will change the "family" nature of the club. Would you like to retain this "family" nature, while still implementing a computerised environment?
10) Do you want to cater for the demands of the younger crowd, older crowd or both.
11) You have previously been asked for copies of reports and records and you said to ask Olive. Both Olive and Brenda are reluctant to give out this information without the boss's approval. Would it be possible for you to give one of them the OK?

Hector Dare

1) You've indicated that you'd prefer to get more accurate reports more quickly. What is it about the reports that isn't accurate? Apart from the monthly report for the board, what is the time frame that you normally get these reports in and when would you prefer to get them?

2) You said that the reports for the board have profits, loss, and an overview of any problems. What problems have cropped up

before? Are there any that are continually cropping up?

3) It's been noted that you like to develop public relations with your members. Have any of your members asked if the club is on the net yet? Do you know if many of your members are connected to the internet or have an email address?

4) Would you like to have more people at functions/tournaments etc?

5) Have any of your members expressed an interest in other sporting activities?

6) How are the staff and members informed of upcoming functions?

7) Have any of the staff asked about getting their pay to go straight into the bank? Mart said that wages are paid by cheque, however, Brenda said that wages go straight into the bank. Is this an option that Mart is aware of?

8) You said that the money would be better spent on upgrading the sporting facilities. What needs upgrading in the sporting area?

Olive Vetti

1) How are the staff and members informed of upcoming functions?
2) Do you often type the same letter every week or month (ie.membership renewal reminders etc) and just change small details?
3) Are there any tasks that you have to do that just seems to take too long to do, or that you feel is just a waste of time?
4) How do people pay their membership fees (credit card, cash, cheque etc)?
5) What events are not covered by membership fees?

Brenda Bean

1) Are there any areas of the club that you believe are not producing an acceptable financial return? If so, can you provide any reasons why?
2) Why do the tally sheets, wage sheets, invoices etc, go through Olive to get to you?
3) Are there any tasks that you have to do that just seems to take too

long to do, or that you feel is just a waste of time?

4) Hector said that staff wages are paid by cheque, however, you said that wages are automatically credited to the bank. Does Hector know about this option?

Mart

1) What exactly are you referring to when you say you could do with new equipment?
2) If the bar were to be automated to a degree, with the use of computers, would you prefer the responsibility for their use to assigned to another member of your staff ?

Jim Beam

1) Are you aware of any procedures that have been successfully implemented in other bars that successfully track the poker machine payments?

Carl Ini

1) Are the rosters generally preset and changes made when needed ?
2) Why do you believe Mart has not implemented your recommendation of an automatic cash register ?

Chardonnay Smirnoff

1) Chardonnay, you have a business degree, do you see any short comings in the present working business approach that the bar or the club are presently implementing?
2) What do you believe needs to be done to improve the business?

Paul Partoo

in charge of golf course

1. I understand that you have some problems with the booking system through Olive. In the future would you like to take bookings yourself or through Olive?
2. May I know what the problem is that you are facing when taking bookings through Olive?
3. You mentioned before that the golf club is owned by Snails Pace Sporting Club, what does the company get in return from the golf club? (is it only from peoples bookings for the game, or anything else) What about for people dropping in for the game?
4. How do you manage the payment differ from equipment repair? Do you issue invoices?

OBSERVATIONS

Head Honcho

1. Duties:
    - Monthly report to the board
    - ensure that everyone gets paid
    - ensure that the club meets legal requirements
2. It is inevitable that staff will have to use a fully computerised system. (If they can't cope, they will have to leave). This includes Herb (access work requests and schedule work projects), Hal, and Bindi (check the schedule and pickup the jobs allocated).
3. Wants all areas of the club linked together with management having access to all (not paper based).
4. Wants quotes on 3 computerised tills & software (initially).
5. Cost to be $500 per day for labour. Equipment to be affordable quality.
6. There are 100 members. It's very difficult to join. Most business is done with visitors who cannot get membership. Hopes to attract thousands of summer visitors.

Hector Dare

1. Would prefer reports to be more accurate and delivered sooner.
2. Says that the only report that the board requires (along with a statement from the accountant) is a monthly report indicating:
    - profit (bar, golf club)
    - loss
    - overview of any problems
3. Recognises that a database of member profiles would be handy.
4. Would like to be able to access daily financial outlook of each club outlet, as long as the people didn't think they were being spied upon.
5. A dairy of "Club Functions" may be a good idea, although he prides himself of never missing a function.
6. Doesn't see eye to eye with Head Honcho and the new board.
7. Says there are no security cameras.
8. Doesn't have record of drink ordering (Mart does).
9. Doesn't have record of poker machine payouts, collections, repairs, casual bar staff rosters and hours to be paid (Mart does).
10. Non profit club. Members hold shares.
11. 10 - 20 board members at monthly meeting.
12. Most popular facilities/services:

- old style bar (older members)
- bowling greens (older members)
- lounge bar (younger members & their friends)
- golf course (younger members & their friends)

Olive Vetti

1. Doesn't like computers but would learn if she had to.
2. "Look, nothing could be easier than my filing system".
3. Has a roster for bowls games (men/womens)
4. A typical day might include:
    - members enquires
    - tennis bookings
    - phone calls
    - photocopying
    - banking
    - tallying up the day's receipts
    - other duties as required
5. Filing system:
    - card file system for membership details
    - filing cabinets for correspondence, copies of bills, timesheets etc
6. Booking system:
    - booking sheets near phone, sporting dept. can photocopy them if they want.
7. Internal information that Olive requires from:

    Hector
    - up and coming competitions, promotions, social events (word of mouth)
    - membership information, on membership application form as they occur (every couple of months or so)
    - general correspondence to members or suppliers. (Hand written on bits of paper)
    - invoices/bills from suppliers
    - internal memos re club procedures (hand written on paper memo form)
    - minutes of the monthly board meetings (hand written).

    Brenda
    - her weekly timesheet (hand written onto a form)

- copy of monthly balance sheet (a computer report!)
- cheques to pay bills

Mart
- weekly timesheets for him and his staff (hand written)
- receipts of daily takings (hand written onto a form)
- invoices/accounts to be paid

Paul
- golf bookings (over phone, or in person)
- weekly timesheet (hand written onto form)
- invoices/accounts to be paid.

8. Internal information that Olive provides to:

Hector
- copies of correspondence that she has sent on his behalf
- member cards (he comes and looks at them)
- brochures/promotions (she types them herself)
- monthly board meeting minutes (typed)
- she tells him if they receive a lot of telephone enquires re functions etc
- bank deposit slip (he comes and looks)

Brenda
- cash book (brenda "snoops" around it whenever she's in)
- all timesheets (hand written onto form)
- photocopies of bank deposit slips (Olive does daily banking, she gives photocopies to Brenda once a week)
- summary of receipts and invoices (typed)

Paul
- booking sheets (phone call, or Paul comes to look at them)
- brochures/promotion letters that Olive has sent to members

Herb
- bookings (Herb comes to see)

9. Equipment that Olive uses:
   - phone
   - fax
   - photocopier
   - typewriter
   - card files
   - filing cabinets

Brenda Bean

1. Internal information that Brenda requires from:

Hector
- upcoming events that affect the clubs "bottom line" (verbal)

- Feedback on monthly board meetings (verbal)

2. Internal information that Brenda provides to:
   Hector
   - monthly balance sheet
   - weekly wages report (done on her home computer)
   - she phones Olive if she can't get hold of Hector to get accounting information twice per week
3. External information that Brenda provides to::
   Olive
   - preparation of cheques for payment of invoices/bills (Olive says she deposits daily takings into the bank every day)

   Bank
   - wage information for automatic credit of wages (despite other claims that wages were paid by cheque).

Mart

1) Mart has implied that he may leave if the computerisation goes ahead.
2) At the end of each day Mart tallies up the cash totals takes away the cash float(money used to give change) and gets it ready for the next day. He then fills out the totals form and places it in the safe. Hector takes it out of the safe the next day gives the tally sheet to Olive to pass on to Brenda and then goes down to the Bank and banks the money. The wage sheets are filled in by me each day and the total hours worked sheet is given to Olive at the end of Tuesday. This is then passed to Brenda who works out the wages. The wages are then paid by cheque each Friday
3) The methods that Mart employs for record keeping are as follows. I have a number of different books. My stock books keep details of the all the bar stock in and out. I record the current stock deduct what we use each week and re-order weekly. When the stock comes in I sign for it and send the invoice to Olive who passes it on to Brenda for payment. I also have poker machine payout and repair books. I also have wage books which I fill out and send to Olive/Brenda on a weekly basis.
4) The incoming wines and beers recorded as follows. I keep a record of all the stock. As we use up our stock I send out an order and that is delivered and I then add it to my stock list. I send the invoice with my signature as having received the stock to Olive who passes it on to Brenda.
5) Mart handles all the purchases himself - the Bar goes through

about $25000 worth of goods per week - including food and alcoholic beverages. It takes about half a day to complete a purchase order, MANUALLY? Each night Mart does a brief audit for about an hour. The inventory, ie beer, wine, spirits, snack foods are kept track of within books for each of the main items. The daily poker machine pay-outs and collections are again documented in a poker machine book which is divided into sections for each machine. When any payout occurs Mart writes it in the appropriate section.

Jim Beam

1) We do not want to lose the friendly personal touch of the bar because of computers
2) What would be helpful would be something to track the poker machine payouts. However, this is only a minor problem because I have never made any really big mistakes in payouts YET, this MUST mean I understand it enough.

Carl Ini

1) A till that automatically calculates the drink prices is needed.
2) If you can get something to help me do the paperwork, great. The rosters are a handful, and I can never find any supplier records or other records when I need them. Its OK when Olives here but when she is at home, it can be a small problem. Mart looks after most of the paperwork anyhow.
3) Retrieving supplier information, and delivery information via a database would be helpful. When to place orders etc. Stocktake is a huge job and if you could computerise that I would be grateful.
4) A cash Register would be a necessary improvement to the bar.

Chardonnay Smirnoff

1) She does not access any records! All she does is a till read at the end of the night and leaves it in the cash bag to be put in the safe.

Paul Partoo

In charge of golf course

1. Does not know much about computers
2. Well managed person (manages his time to organise competitions, ordering and selling fast food, repairing equipment.
3. Keen to expand golf course to 18 holes link.
4. Keen to expand his shop and lesson.

5. By keeping the golf course busy, it brings greater revenue to the bar and poker machine area.
6. Hard worker.
7. Golf club professional
8. Has a wife and two small children.

Herb Gross

Head Groundsperson

1. was involved in a failed business venture 3 years ago
2. Engaged in a long standing feud with Paul
3. Does not like computers
4. Deals with Mart, running books on the bowling league etc
5. Has two people working under him ie: Hal Lusin-Nate (Junior groundsperson) and Bindi Brown (labourer)

Hal Lusin-Nate

Junior groundsperson

1. a passionate gardener
2. obsessed with parallel lines

Bindi Brown

Labourer

1. Call of both Herb and Hal.
2. Likes to listen to Paul's complaints about the lack of work done in the golf course

OUTLINE OF INFORMATION GATHERING METHODS

Head Honcho has provided an initial overview of the Snails Pace Sporting Club. This has provided us with a good introduction to the Club, but details now need to be generated. Whilst taking into account the feelings of the management, further detailed information will now be gathered from individual members of the Club on a more personal level. Identifying the role that each person plays, his or her responsibilities and their connection with other staff and club members.

DEVELOPMENT OF QUESTIONS

At the moment no suggestions are being presented to the Club. In fact, the team is more interested in what each individual personally believes needs to be done to modernise and improve the present situation. Their views and a thorough understanding of the inner workings of the Club together with consideration to any problems they face, will provide the building blocks to our recommendations.

One primary purpose of ForwardPIP Solutionists is to research and evaluate any ideas from the Club, a service enhancement, or a service termination. This purpose lends itself to the following tasks as appropriate:

a) Complete a "proof of concept" for the idea based on a needs assessment, customer surveys and input on user requirements, pilot projects and the like. After careful evaluation, ForwardPIP Soluionists may choose to discontinue an initiative.

b) Determine the "feasibility" of the initiative. Evaluate new and emerging technologies and construct a mental or physical model or prototype for implementation and service delivery.

c) Conduct appropriate educational and informational sessions for Snails Pace Sporting Club staff leading to further definition and clarification.

d) Determine the validity and timing of the initiative.

e) Estimate the financial resources and identify the human resources necessary to develop and deliver the service.

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Appendix F

Contractor's Quote

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Appendix G

Considerations to take into account for the solution

HOW WILL THE CHANGES BENEFIT THE CLUB MEMBERS AND SUBSEQUENTLY THE CLUB

1. How would you describe this service or initiative?

2. Who are the customers toward which this service is targeted?

3. What are the benefits those customers will realize as a result of this service? How will the Club incorporate customer input and user requirements into the development and delivery of this service?

4. What are the cost savings, expenses, or liabilities that the customers will realize as a result of this service?

5. What does Club need to do to deliver this service to the customers? How will service availability, reliability, and performance be monitored?

6. What resources are needed for the development and ongoing delivery of the service?

Human Resources

What particular skills are needed to achieve the outputs?
What staff are currently available and qualified to contribute those skills?
Do we need to contract or partner for additional human resources to deliver those outputs?
Who would you recommend be responsible for developing this service?
Who will be responsible for owning this service?
What service owner training will be necessary to transition these outputs to the service owner(s) when the service is delivered?

Technical Resources

What technology is available to provide the needed outputs? What opportunities for automation exist relating to the delivery of this service? Do technical resources currently exist to provide the needed outputs?
Through which vendors are those technologies mature, acceptable, and available? What partnership opportunities exist in developing or acquiring those technologies?
What ongoing technical resources will be necessary to deliver the service?

What physical facilities are needed to house any necessary hardware?

Financial Resources

What are the costs associated with the human resources?
What are the costs associated with the technical resources?
What Club revenues will decline as a result of the delivery of this service?
What charges will be associated with the delivery of this service?
What is the timeline for delivering the service to the customers?

Customer Communication

How will the club be made aware of the benefits of this service?
What tasks must be accomplished and/or products delivered to prepare them for this service (hardware, software, support, etc.)?
What are the start dates and finish dates for each of those tasks/products?
Who will be responsible for completing those tasks and delivering those products?
How will we know this service is satisfactory?
What will the life cycle be for the service? What will happen in:
YR1?, YR2?, YR3?

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Appendix H

Natsoft Till Software