The Apple Vision

Slide 0 - Introduction To Apple (OPTIONAL)

This slide allows the presentor to introduce Apple as a company to those who may not be familiar with our size and financial track record.

Apple has outgrown the garage .... it has grown to be a major multinational company

- We will be a $5 billion dollar revenue company in 1989
- We are now knocking on the door and close to being one of the top Fortune 100 companies
- We have no debt and $600 million in cash in the bank
- We now have more than 10,000 employees
- We operate in 85 countries around the world ... and international revenues are 40% of our business

Slide 1 - Advertising Themes

On the projection screen are three advertising themes that Apple has used over the years to characterize to the marketplace what it stood for as a company and what its products were trying to do.

In the right hand corner, ***"One Person, One Computer"*** was Apple's first marketing theme in 1977 when the original Apple ll was introduced. It became the rallying cry of the so called Apple revolution. In these early days Steve Jobs and Steve Wozniak had a novel concept to make computer power affordable and available to individuals in order to give the individual a greater balance of power over the institution.

Later, in 1984 when the Macintosh was released as a product ***"Wheels for the Mind"*** became our major marketing theme for the higher education market. What this theme emphasized was that the Macintosh had the power to leverage the capabilities of the mind in the same way that the bicycle leveraged the physical properties of the body.

Recently, and coincidentally at the same time that we hired a new advertising agency, we initiated a new marketing emphasis which was ***"The power to be your best"***.

Across all of these messages you will note a consistent theme of leverage ... using the personal computer as a tool to increase the creative and productive capabilities of individuals.

Slide 2 - Apple's Vision

If I were to crystallize what we have been trying to convey to the marketplace with these advertising themes I would do it in this way:

What Apple does best ... the thing that we bring to the party ... is create the world's friendliest, most understandable, most usable computers ... that empower ordinary, non-technical people ... to improve the way they create work, learn, think, and communicate.

In more succinct terms, **Apple's vision, mission and overriding strength is that we make computers that are easy to learn and use**. Personal computers for people ... computers that make the benefits of computer technology accessible to ordinary, non-technical people.

Slide 3 - Fundamental Apple Concept

Underlying that unique strength is a ***fundamental Apple concept*** that differentiates us from our competition in the marketplace ... and that is that Apple's **design point** for the computers that we produce **is the individual**.

Let me explain the significance of this by **contrasting Apple's approach with the approach taken by most major computer makers**.

In most traditional computer companies mini and mainframe computers are the mainstream of their business. Therefore, the technical expertise, the largest portion of the research and development funding and the creative energies of their best people are **focused on technical issues which are critical to the mainstream of their business activity**. As a result, the critical thinking in these companies is directed toward issues such as quantity of DASD, achieving faster channel speeds, implementing better scheduling algorithms and processing the maximum number of transactions per second.

At Apple, that's not our focus. Our mainstream business is making easy-to-use personal computers. This means simplifying the user's experience with the technology and making it easier for non-technical people to get information into and out of the computer. Therefore, **our best minds and our technical expertise are focused on the user interface**.

Jean-Louis Gassee, who is often described as Apple's most colorful visionary, probably said it best. He said **"Apple builds computers that touch people ... not number crunchers in the back room"**.

In fact, Apple looks at computing from a **philosophically different point of view** than most traditional computer companies. To our competition, personal computers are viewed as peripheral devices to a mainframe. To Apple, mainframes are viewed as peripheral devices to Macintosh.

Slide 4 - Information Appliance

It was an **obsession with simplifying the user's experience with the technology** that was the **driving force behind Macintosh**.

You have all heard the expression that "what is your strength can also be your weakness" ... particularly when you take something to an extreme. To some extent, Apple fell victim to this with Macintosh because the design team took the ease-of-use concept to an extreme.

The initial Macintosh **design objective was to produce an "information appliance" ... as simple to use as a toaster**. The goal was to design a personal computer that was so easy-to-use that anybody ... regardless of their level of technical knowledge ... could use it.

And in the design team's initial thinking, if you put expansion cards in it and if you enabled it to connect to host computers, that was making the technology more complex. So the initial Macintosh was a self-contained information appliance ... the 128K Macintosh ... very similar in concept to the notion of a toaster.

Now Apple obviously went overboard by taking its ease-of-use concepts to the extreme. However, we recognized the problem and have added both an open architecture and connectivity to the product line ... but that gives you a sense of where Apple was coming from in 1984 and why Macintosh came out as a closed architecture machine.

Slide 5 - Apple Is In The Tool Business

Apple is essentially in the **tool business**. People use tools to increase productivity, increase work quality, and do things that were just not possible before the availability of low cost, easy to use computer power.

However ... a tool, in and of itself, has no inherent value. The only value of a tool is in its ease of learning and ease of use. And you don't get the benefits of a tool until you achieve proficiency.

There are **two factors that make a tool easy or hard to learn and use**:

First, the **amount of new knowledge** which must be learned to become proficient in the tool. The **less new knowledge that you need to absorb makes a tool easier to learn and use**.

Second, the **amount of prior knowledge** that is applicable to the use of a tool. The **more prior life experiences that are applicable makes a tool easier to learn and use.**

Slide 6 - The Macintosh Advantage

There were **two key Macintosh design principles that simplified the user's experience with the technology**.

First, **Consistency of Operation** ... which **minimizes the amount of new knowledge** that must be learned.

Second, **Intuitiveness of Operation** ... which **maximizes the amount of prior knowledge** and life experiences applicable to the use of the tool.

Slide 7 - Macintosh Consistency

Macintosh consistency is a major competitive advantage and comes in two forms.

First, **Consistent Applications**. Today there are approximately 5,000 Macintosh applications that all look, feel and operate the same way. This means that when you learn your first application approximately 80+% of what you learned is applicable to mastering the next and subsequent applications. It is this **unique consistency across applications** which is the **single most important competitive advantage of Macintosh**.

Second, **Consistent Operating System Interaction**. The user communicates with the Macintosh operating system using the same consistent concepts that they use to operate their application programs.

Slide 8 - Macintosh Intuitiveness

Macintosh intuitiveness is the second major competitive advantage because it enables people to work the way they think and use familiar concepts and objects from everyday life.

First, the Macintosh design enables the user to see and **manipulate visual pictures of physical objects that they are already familiar with**. Examples of these objects include a calculator, a calendar, a trash can and a file folder.

Second, **all commands are in English**. There are no complex or unfamiliar text commands to either memorize or to spend 30 minutes researching in a thick reference manual in order to use the machine. Every command you can use is in English on the screen and you only have to point to it using the mouse.

Transition Statement ...

The benefit of Macintosh's consistent and intuitive user interface has been well documented by the press and by enthusiastic users.

Slide 9 - Benefit: Less Application Learning Time

The Gartner group, an independent market research firm, published a research study showing that **applications that operate the same way reduce learning and training time**. This chart contrasts the incremental time required to learn each new application program for both the Macintosh and the IBM PC.

Slide 10 - Benefit: Ease Of Use Promotes Use

Peat, Marwick and Main ... a major international accounting firm ... also conducted a research study which concluded that **“ease of use promotes use”.** Their findings showed that the average Macintosh user used their computer two and a half hours a day versus 30 minutes a day for the competition and that the average Macintosh user knew, understood and was familiar with six applications versus two for the competition.

Slide 11- Benefit: Lowest Life Cycle Cost

This all nets out in the lowest life cycle cost. A Gartner group research study concluded that over a five year period the Macintosh is some **28% less cost** than the IBM PC ... **a savings of almost $5,600 per user**.

Slide 12: Traditional Computing Model

Macintosh **consistency and intuitiveness did not happen by accident**. It was the result of conscious design goals and a unique architecture conceived by the Macintosh design team. We can best explain the significance and importance of this Macintosh architecture by contrasting it with more traditional approaches to computer design.

The traditional model of computing that we all have grown up with contains three levels: (1) the hardware layer, (2) the operating system layer, and (3) the application layer. This is the classical model that has been with us for the last 30 years of computer science.

Transition Statement .....

However, if the Macintosh design team's goal was to build an information appliance that was as easy to use as a toaster and not intimidating to the average non-technical user a new and different approach was needed.

Slide 13: Macintosh vs. Traditional Focus

To insure high ease-of-use, the Macintosh design team took a bold and different approach by focusing on the **user experience of getting information IN and OUT of the computer** instead of how the computer worked internally.

It was this concentration on the user interface with the technology that produced the product design requirement for consistency and intuitiveness.

To put it into perspective, the user experience with a system wasn't an afterthought .... it was the central thought behind the entire architecture of the Macintosh.

Slide 14: Unique Macintosh Architecture

The Macintosh design team **“forced” a consistent and intuitive interface by adding two new layers** to the traditional three level computing model: a **TOOL BOX FOR DEVELOPERS** ... and a **DESKTOP FOR USERS**.

The **TOOLBOX FOR DEVELOPERS** is ... in essence ... **a software development erector set** that Apple provides to Macintosh developers. It accomplishes two objectives.

First, it provides code to perform common functions required by every application. Third party developers are motivated to use this toolbox because it reduces the time required to develop new applications.

Second, Because developers are incented to take advantage of this common code Macintosh applications look and feel and, most importantly, work together in the same way.

The **DESKTOP FOR USERS** is software provided with every Macintosh to **simplify and personalize the user’s experience with the technology**. This software supports icons on the screen, enables mouse movements to manipulate the system and allows individual customization of the user interface via color, sound and how and where information is displayed.

Slide 15: State-of-the-Art Architecture

Another important benefit of Macintosh is that it is based on an advanced technology platform. It was a state-of-the-art architecture in 1984 and it is a state-of-the-art architecture today.

At a time when 8 bit personal computers were the norm Macintosh introduced a computer based upon a 32 bit microprocessor. At a time when a text command based user interface was the norm, Macintosh introduced a a graphical user interface with menus, windows and the now famous mouse. The design objective .... and I can visualize the words coming out of Steve's mouth .... was to build an “insanely great computer”. **Macintosh was not, and is not, a status quo machine.**

Slide 16: Macintosh Modularity

More importantly, each of the five levels in the Macintosh architecture is designed as a **modular platform** that actually **facilitates technology change** .... and the incorporation of these technology changes are transparent to both the user and the application.

If you will, envision each of these five layers of the Macintosh architecture as consisting of a series of bricks. And as new technology advances happen, you can grab one of the old technology bricks, pull it out and replace it with a new and more advanced technology brick.

There are numerous **examples of** how Macintosh has incorporated **technology advancements without disruption**. We transparently **upgraded the original Motorola 68000** microprocessor to more advanced 68020 and 68030 processors. We changed from a **flat to a hierarchical file system**. We moved from **black and white to color** monitors. We moved from the **finder to MultiFinder**. Each one of these are examples of individual bricks that have been enhanced with new brick and put it in with virtually no disruption to the user community.

The net result is that this state-of-the-art Macintosh architecture provides a **strategic technology platform that resists obsolescence** and, in fact, is the only PC architecture which provides users an **upward growth path without disruption.**

Slide 17: Summary of Benefits

If I were to summarize the benefits of Macintosh as a personal computer, I would highlight the **benefits to two important constituencies**: the END USER community and the INFORMATION SYSTEMS organization.

The **END USER** gains the benefit of 5,000+ consistent applications coupled with an intuitive graphics user interface. This results in: a computer that is easier to learn and use, higher application usage levels and lower total cost.

The **INFORMATION SYSTEMS** organization gains the benefit of a state-of-the-art architecture and a modular design. This enables Macintosh to be a strategic long term platform, facilitate technology advancements without disruption and requires less training and support staff.

Slide 18 - Multi-vendor Networked World

As the role of the personal computer has grown in the organization, it is rare that it can operate effectively as an isolated island because **all information isn't local**, ... or, resident on the same brand of computer, ...or, stored in the same format or database product,..., or accessible using a single communications protocol.

Information that must be accessed and analyzed in order to do one's job is on the desktop, at the department level, stored elsewhere in the enterprise and, in some cases, even supplied in electronic form from external information sources.

We are living in a multi-vendor networked world.

Slide 19 - Connecting Computers To Computers

Apple has a very focused **two part strategy** for extending the ease-of-use capabilities of the Macintosh out into this multi-vendor networked world.

Part one of the strategy ... which we refer to here as ***connecting computers to computers*** ... is to **support all the dominant networking standards**. This includes: AppleTalk, Ethernet, Token Ring, TCP/IP, SNA, DecNet, and the major OSI protocols such as X.25 and X.400.

Slide 20 - Apple Communications Architecture

On the screen is a graphic illustration of the Apple Communications Architecture which is **our view of how to connect Macintosh to other computers in a multi-vendor networked world**. There are three components:

First, **Macintosh** personal computers connected together in a work group via an AppleTalk local area network.

Second, access to shared resources ... such as electronic mail, printing and file services ... provided from a **Work Group Server**.

Third, access to remote information and resources through an **Enterprise Gateway** that supports all the dominant local and wide area networking protocols

Transition Statement ...

In supporting these dominant networking standards, however, we also recognize that we are doing what every other major computer manufacturer must do if they want to stay in business. It is an essential capability that we must provide but one that lacks any marketplace differentiation.

The real value that Apple can bring to a multi-vendor networked world is an outgrowth of our roots and our vision ... making computers that are easy to learn and use.

Slide 21 - Connecting People To Information

Consequently, part 2 ... and the most important part of our strategy ... which we call ***connecting people to information*** ... is to extend the familiar Macintosh ease-of-use concepts into a multi-vendor networked environment. This is where Apple's strengths lie. It is our gameplan to provide a superior user interface that will clearly differentiate us from the competition. And, it is an essential part of how we will provide tools for individuals to thrive and excel in an information age economy.

Transition Statement ...

We believe that in a multi-vendor networked world the value of a consistent, intuitive user interface is even more apparent. Consider two concepts.

Slide 22 - The Macintosh Buffer

First, envision the **Macintosh as a buffer** that allows ordinary non-technical people to access information on remote mainframe computers ... but **without having to deal with the complexities of host and networking technology**.

Slide 23 - Single, Consistent Window

Second, envision the **Macintosh as a single consistent window** to information no matter what computer it resides on.

Here is our business proposition .... When you use a Macintosh you learn a set of consistent, intuitive commands to access and work with local data. We feel that you should be able to **use these same commands and the same intuitive way of working** when accessing information from remote computers.

In essence, **all information should look and act like local information** regardless of: where it is geographically stored ... the brand of computer it is stored on ... the database format it is stored in ... or the type of wires and protocols used to access it.

Slide 24 - Tip Of The Iceberg

Extending Macintosh ease-of-use capabilities into a multi-vendor networked world will be done through innovative software. Our initial software capabilities ... representing only the tip of the iceberg ... are here today and have begun to implement this vision.

First, **AppleTalk**, which extends the Macintosh consistency and intuitiveness into a local are networking environment. So, for example, if you're accessing information on a network file server you access it in exactly the same way you access information on an internal floppy disk in the Macintosh.

AppleTalk for VMS takes that concept a step further and enables information residing on a VAX mini or mainframe computer to also visually look like and be accessed in the same way as information residing on a floppy disk on a stand alone Macintosh.

MacWorkstation provides the capability for mini and mainframe application programs to have the familiar, consistent Macintosh user interface.

HyperCard, is a tool that can buffer the user from the complexities of host and networking technology. With HyperCard you can connect to a host computer application with only a single click of the mouse button.

CL/1 is an emerging capability that enables a Macintosh user to transparently access and use information in various remote IBM and VAX host computer databases just as if it was like local data.

Transition Statement ...

I would like to take a minute draw a clear picture of **how Apple's vision and approach to consistency and connectivity is unique and different from other major computer manufacturers**.

Slide 25 - Vax Strategy

Several years ago, **Digital Equipment Corporation** developed a major marketing strategy and marketplace advantage based around the VAX computer product line. Their vision was to build a range of computers that **allowed you to run the same operating system and the same applications software from the bottom end of the line up to the top end of the line**. This meant that customers could grow and move to larger models of VAX computers without having to throw away or rewrite software. It was a brilliant product strategy that the market accepted well.

Slide 26 - SAA Strategy

IBM, on the other hand, had numerous small, midrange and large computer product lines that were not compatible. To get around this problem and to respond to market share gains made by the VAX product line IBM announced its own strategy for product line consistency ... Systems Application Architecture or SAA.

IBM's SAA strategy is an attempt to achieve consistency across its different and incompatible product lines by agreeing on a subset of common programming languages, common applications, common communications protocols and a common user access or interface that will be supported across three strategic product platforms. The conceptual promise of SAA is to provide the same VAX-like consistency from the PS/2 on the desktop, through the AS/400 midrange systems, all the way up to the 3090 at the top end of the product range. While it is a long term (10 - 15 year) strategy, it is again an excellent concept.

Slide 27 - Consistent, Intuitive Information Access

Using these two strategies as a framework, Apple's connectivity strategy can be contrasted and summarized in a nutshell.

While other major computer vendors have a strategy to provide vertical consistency up and down their product line ... Macintosh has a horizontal strategy.

Macintosh will provide consistent, intuitive access to information across a multi-vendor networked world.

Slide 28 - In Summary

The essence of our strength is making technology approachable ... for ordinary, non-technical people.

Our gameplan is to **extend the reach** of these benefits into a multi-vendor networked world.

First, by **connecting computers to computers** through support of the dominant networking standards

Second, by **connecting people to information** through extension of the Macintosh ease-of-use concepts into a multi-vendor networked world.

Slide 29 - Extend Product Range

Today, Apple has **six models** in the Macintosh product line: The Macintosh **Plus**; The Macintosh **SE**; The Macintosh **SE/30**; The Macintosh **II**; The Macintosh **IIx**; and, The Macintosh **IIcx**.

Apple **will be extending** this product family **at both the low end ... and at the high end**.

And ... although we are not making any product announcements here today ... remember the 50Mhz, 12 MIPS 68030 microprocessor recently announced by Motorola. With the combination of Motorola's state-of-the-art microprocessor family and the Macintosh modular architecture we will be able to supply the powerful processing capabilities required by future capabilities and technologies.

Slide 31 - Even More Ease Of Use

We are not standing still. Our next version of the Macintosh operating system will offer several important enhancements that will make the easy-to-use Macintosh **even easier to use** than it is today.

Double clicking will always be useful. Today when you double click on an icon ... sometimes it works and sometimes you get no response plus a message saying “application not available or missing”. In the future, this will no longer be true. When you double click on an icon it will always produce results ... e.g. sound files will play sounds and image files will be displayed.

Expanded icon dragging. Today you can copy a file by dragging a document to another file or you can throw an application or file away by dragging it to the trash can. In the future we will expand upon this intuitive metaphor. For example, you will be able to add fonts by dragging them to the system folder and you will be able to print documents by dragging them to a printer icon. This will provide even more consistency.

One Button Installer. Future operating systems will be installed by a simple single click of the mouse on a button that says “Install”. Think of it as an automatic transmission for operating system releases and upgrades.

Tear off menus become standard. The concept of tear off menus that has become very popular in recent Macintosh applications will now come as a standard feature across all Macintosh applications.

System wide help facility. We are adding a valuable capability that will provide “help” information that describes how things work just by holding down the option key and clicking the mouse button on an icon or menu item. This will virtually eliminate the need to read manuals.

Rapid file location and presentation. With this new capability you will not only be able to find out where a file is located on the disk but you will be presented with the desired file in the currently active window. This is the first finder that actually ”finds”.

Slide 32 - Technology Platform Advances

The next version of the operating system will also bring important new advancements to the Macintosh technology platform.

More and larger applications with less physical memory. We will upgrade operating system capabilities to **full 32 bit addressing and support virtual memory**. This means that Macintosh can address up to 128 megabytes of physical memory and up to 4 gigabytes of disk storage. This will provide a long term growth path and the ability to run an extremely large individual application program or have numerous application programs in memory at the same time without requiring them to fully reside in physical memory

Interapplication communication. Not only will we provide the traditional program-to-program communication but we will add a significant new capability: **dynamic document linking**. This feature will allow you to link documents so that when information in one document changes it will also automatically upgrade any other document that uses that data. Envision a spreadsheet of numbers that are cut and pasted into a charting program to create a graphic and then that graphic is cut and pasted into a text document. By simply linking these documents together with a click of the mouse, a change in a number in the spreadsheet will automatically cause the graphic in the charting program and the graphic in the text document to be updated. Even more important, dynamic document linking can be established between files across a network.

Photographic quality images. We recently announced and are delivering an important new capability ... 32 bit color. This means you now can generate your choice of up to 16 million different colors and produce photographic quality images.

Sharp type at any size. Macintosh will support even higher quality printing via a new capability called **outline fonts**. With outline fonts characters are generated from mathematical equations instead of bit mapped images stored in the computer. Outline fonts will provide **high (Postscrpt-like) quality text at any size, at any resolution, on any device (monitor or printer)** ... and provides a full WYSIWYG (What You See Is What You Get) capability.

Advances in printing. Numerous advances in printing such as support for color printing and spooling for all output device types (instead of just the LaserWriter).

New Sound Capabilities. Important new features for sound support include MIDI (Musical Instrument Digital Interface) sequencing, sound compression at 6:1 or 3:1 and the ability to sequence sound with graphic images.

Slide 33 - Better Communications

Important new capabilities to round out our ability to connect computers to computers will better position Macintosh to be used in mainstream and mission critical applications.

Support for all the dominant networking standards. In particular, good support for connectivity to IBM host computers. Our June 1989 communications product announcements detailed these capabilities.

Developer tools for consistency in data communications. These are additional software modules for the "Toolbox For Developers" that will promote the same consistency among applications that use data communications that we have today among the 5,000 Macintosh standalone applications.

Support for foreign file systems on the desktop. This is another set of software modules for the "Toolbox for Developers" that makes it easy for developers to provide support for non-Macintosh file systems (such as NFS or DOS) from their applications ... via icons on the desktop, using the same consistent and familiar Macintosh commands as if it was a Macintosh formatted file.

Ability for applications to transparently connect to data bases residing on host computers. This is a significant new capability that enables applications to use and access information residing on host computers ... and do it just like the information was stored locally on a disk in the Macintosh. It is a strategic new capability that will be accomplished by integrating the CL/1 connectivity language into the Macintosh operating system and is the centerpiece of our strategy to provide consistent, intuitive access to information across a multi-vendor networked world.

Slide 34: Summary

In summary, today we talked about:

... the roots of Apple and how the company's **perspective on computing is fundamentally different** than most other computer manufacturers,

...why the Macintosh is **easy to learn and use**,

... **how we will extend these ease of use concepts** into a multi-vendor network environment ,

... what our **networking and communications strategy** is and **how it is different** from other major vendors,

... where we are taking the product line in the future to **insure that we retain our competitive edge and differentiation** in the marketplace.

I would like to conclude my talk by pointing out that that we think the unique and forward thinking architecture of Macintosh provides **significant advantages to two important constituencies: THE END USER and the INFORMATION SYSTEMS ORGANIZATION**.

To the **END USER** we offer 5000+ consistent applications and an intuitive graphics interface. This results in a computer that is easier to learn and use, one that has higher usage levels and a lower overall lifecycle cost.

To the **INFORMATION SYSTEMS ORGANIZATION** we offer a state-of-the-art technology architecture with a modular design. This results in a long term technology platform that resists obsolescence, provides for ... and actually facilitates technology change without disruption to users or application programs ... and requires less headcount for training and supporting end users.

Slide 35: Apple Logo

This slide may be used to cover any closing remarks.