Wang Selling Guide

NeXT is the only system offering Wang users a path to the future without giving up what they take for granted with Wang:

• *Full Integration of mail, fax, voice, WP and files*

• *Industry Standards - Word Perfect, Lotus, Unix*

• *Centralized Resource Management*

• *Smooth Migration Path from Wang*

The Wang owner is the NeXT buyer

[Note: This selling guide contains only 16 pages, plus appendix.]

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The Big Picture

Horizontal market,
top level sale

According to *Information Week*, IBM invested in Wang to get Wang's golden installed base; *IW* thinks IBM will get 25% and the remaining 75% is up for grabs over the next 2 to 3 years. This is a multi-billion dollar market with an average user that fits the NeXT profile and thinks that Wang has lost that high-tech touch.

Much of our direct selling today is to the top management of major companies and that's how we're going to sell the Wang Replacement Program. The Wang market is a horizontal market cutting across the top of major corporations mainly in financial and insurance industries. Later guides will address vertical markets, such as legal. This document uses Wang terminology and focuses on the issues important to Wang users.

Fortune 500 corporations

Wang was successful selling to virtually all major corporations because they had a compelling departmental OA word processing solution, named WP, and avoided MIS. Most Wang equipment is in CEO, headquarters and administrative operations - typical end-user departments requiring powerful OA with only a few custom applications. It was bought in bulk and grew into large, user-friendly networks for mail and work sharing.

Wang was state-of-the-art in OA 5 to 10 years ago when the Wang decision was made. The decision makers were considered innovators for it because of its WP, centralized access and support, security, etc. However, Wang's inability to keep up has resulted in users wanting:

- competitive advantage with their technology,
- innovations integrated with industry standards to avoid future dead-ends,
- a solution that will put them back on the leading edge,
- a result that will bring them the personal recognition achieved through the Wang implementation.

Don't be fooled by their now-primitive equipment. *End-users who made the Wang decision years ago bought it because it offered state-of-the-art technology to give them competitive advantage. They have the mindset of the NeXT Buyer.*

Office Automation (OA)

Of the million Wang workstations sold last decade, there are about 400,000 doing mainly IPC, still called OA or IIS (Integrated Information Systems) in the Wang world. They are old and ready for replacement. Because of Wang's instability, they feel stuck with a proprietary system with no future and are looking for a migration path into open systems.

Wang OA technology is very proprietary with its own WP, file and disk structures and mail system. NeXT with WordPerfect, Lotus and a UNIX Operating System will be perceived from the start as non-proprietary.

Stress advanced technology, continued central resources and "open systems" along with productivity apps

Only NeXT gives Wang users a path to the future without giving up the conveniences they take for granted on the Wang. Like their old VS, NeXT starts with a "centralized" file resource at it's core (NFS). But we go on to provide the:

- Open System & industry standards of WordPerfect, Lotus, Unix that they ***need***, the
- ease-of-use & productivity gains from app integration that they ***want***, & the
- smooth migration path from Wang's proprietary system that they ***can't live without***.

How? *By putting a NeXT front-end on the Wang VS.*
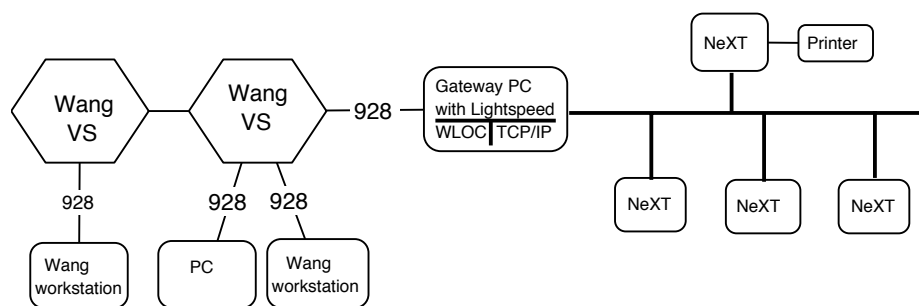
A Wang replacement is also a Trojan horse

We have the opportunity to penetrate many end-user departments of major corporations because employees communicate everything through the network. Once NeXT is plugged into the network, other departments will hear about it. Also, NeXT can multiply through custom apps in the end-user department.

Just show them

Call your local Wang Users Group (see attached list) to demonstrate that NeXT is a pathway to open systems. The large User Groups are very important and reference sales are common. Because everyone in these groups is facing the need to leave Wang, *they will usually welcome a presentation and demo at their meeting.*

Sales Potential

Why Wang?

In the mid-80s Wang's annual revenue approached $2 billion, about half being new equipment sales. Of their million desktops, *our target is the 400,000 that are:*

- used as mainly OA workstations,
- at least 3 years old, and
- concentrated in less than 500 large corporations.

Wang workstations and PCs are connected to the Wang VS minicomputer, bought for its easy-to-learn, menu-driven software and its power to support up to 200 workstations per VS and connect easily to other VSs. Installations grew quickly because the Wang buyer buys in quantity.

They have benefitted from OA and now need tools to provide additional productivity gains as the white-collar work-load increases.

Why Now?

Wang users have been on hold for about 3 years, not buying anything, waiting to see if Wang will survive. With the June '91 IBM remarketing announcement, most users now believe that Wang will not be a hardware player, and will only survive as an integrator of IBM products and/or software developer.

There is a lot of pent-up demand for replacement equipment as well as new technology to satisfy more advanced requirements. We have a unique opportunity for the next 2 years to sell to a market that is

- ready to change,
- unified in its technology requirements,
- buys in volume, and
- talks among itself, especially at user group meetings.

It could become a formula sale. More importantly, it will be a reference sale throughout the Wang community. For a sense of the magnitude of this market, the following chart estimates the revenue potential for NeXT.

Market Size	% Sold	# of Units	Average Sale	$ Revenue
400,000	1%	4,000	$6,500	$26,000,000
400,000	5%	20,000	$6,500	$130,000,000

Target Customer Identification
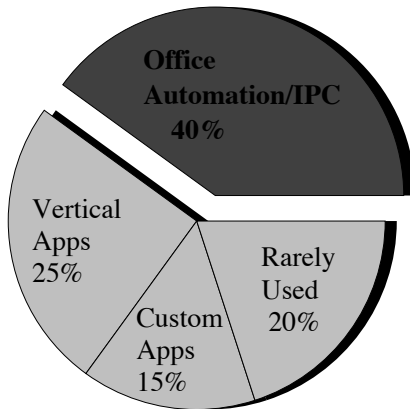
The #1 target is the Wang customers in end-user departments in Fortune 500 corporations who

- are using Wang workstations or IBM-clone PCs mainly for Office Automation,

- desire a move to an industry standard solution, and

- want to return to their position as innovators in their use of high-technology.

This Selling Guide does not target the remainder of the Wang market. However, as we qualify candidates they could be grouped into 2 other categories that will be targeted later.

- Segment #2: Using the Wang VS mainly for custom applications (but typically don't have a programmer on staff to convert from Wang to NeXT).

- Segment #3: Using the Wang VS mainly for vertical applications that need to be developed and supported by a third-party vendor.

*Why not Custom Apps as our #1 target?*

Because it is one-third the size of the OA segment. Also, it is a slower sales cycle and the technical resources for custom development are usually not controlled by the Decision Maker. This segment can be used to start to feed the pipeline for '92 Q3 & Q4.

The Players

An end user sale...MIS less involved than in most commercial deals

The 3 most critical people in a Wang sale are all on the user side: the Decision Maker (end user dept. manager), his or her Technical Advisor (who is also the Wang system administrator) and the Users. The links with MIS tend to be far looser than usual, but we'll need their support when the deal is complete.

Of the key three, only the Technical Advisor knows much about technology. The User and the Decision Maker are more involved in their business than in technology. They gather information from their business/industry sources: information about new technology is incidental.
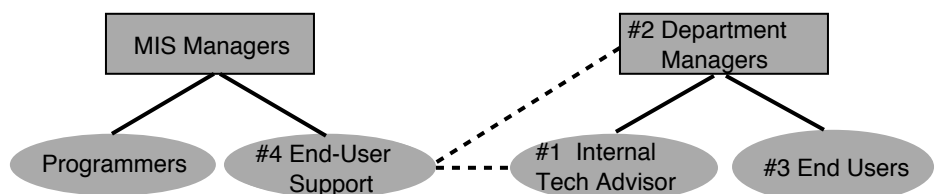
"Technical" Advisor

Also known as the System Administrator, Technical Analyst or MIS Manager (not to be confused with the MIS Department), there is usually one person (the Internal "Technical" Advisor) that is responsible for implementing technology required by the department. *"Technical" is in quotes because this person is rarely very technical at all*.

We want to sell the Internal "Technical" Advisor first because he/she

- is identifiable from Wang user groups, mailing lists and trade shows
- needs a technical solution to meet users expanding requirements
- **wants to restore his/her credibility as technically innovative.**

The Internal "Technical" Advisor is often:

- self-taught—not a programmer and *not really very technical*
- referring to End-User Support for in-depth computer knowledge
- IBM literate
- risen through the ranks of office administration, rather than data processing
- sold on the PC revolution (and therefore somewhat frustrated in his role)
- looking for a migration solution out of the Wang world
- using PCs as front-ends to VS, so considering PCs as logical upgrade
- making recommendations that influence hundreds of desk-tops
- looking to traditional Wang sources (with similar problems) for help:
    Wang periodicals: Wang in the News, Access to Wang, VS News
    Wang user groups: local, national and industry-specific
    Trade shows: Wang-specific and industry-specific.

These "technical" advisors are a fairly tight community because they are a relatively small number of people. There might be just a few thousand of them across the nation and an even smaller subset within the Fortune 500. They value each others experiences and a good reference goes a long way.

Decision Marker

The Decision Maker is generally the manager of the end-user department and is usually less technical than the Internal Technical Advisor. The Decision Maker usually follows the recommendation of the Internal Technical Advisor. If we can get the Decision Maker with the Internal Technical Advisor in the first meeting, that's fine. However, be prepared to go to the Internal Technical Advisor first because a sale to the Decision Maker is far stronger with the Internal Technical Advisor's backing.

End Users

The User is a non-technical office worker in a administrative or headquarters department of a large corporation who has learned to take sophisticated file sharing for granted. The User can be a higher-level executive or a data analyst or a lower-level secretary.

Usually this department has been overlooked by the corporate MIS department because they had minimal "Data Processing" requirements. MIS allowed them to buy their own word processing. And once they got Wang, they expanded into other applications, created personal databases, networked to other Wangs and eventually to the mainframes (usually IBM). Often they are proud of the fact that they can get budgets, etc. to the corporate mainframe for consolidation faster then the departments that work directly on the mainframe.

#4 Target— MIS: Quieter in this sale than most, but not forgotten

MIS and their End-User Support Group

This support group is often called End-User Computing/Support/Assistance and is generally staffed by more technical personnel, familiar with OA and mini-computer products. This group is often managed by the corporation's MIS Department and is the MIS liaison to non-mainframe end users. Their decision making role is usually limited to specific check-offs on connectivity issues, such as 3270 capabilities. Since they usually didn't manage the Wang user's system in the first place, they often don't need to be sold very hard.
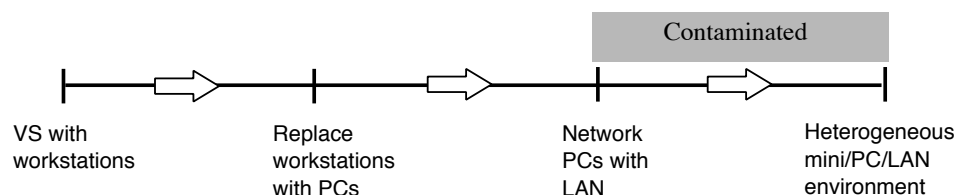
How To Find Them

There are several ways to find the Wang installations in the Fortune 500.

- See the list that went out with this document (Warning: This list is NOT fresh, but it contains names & numbers for decision-makers who actually own Wangs)
- Go to the Wang user group meetings (Call any local Wang office to see where they meet). They *will* be anxious to hear from you and get a demo. They all have a goal of showing their members a transition path out of Wang!
- As we sell into Fortune 500 companies, try to find departments that use Wang and identify the Internal "Technical" Advisor

Buying Continuum

Virtually every Wang user will move through the process shown below from a pure Wang to a fully heterogeneous environment. The shortest sales cycles are on the left.

Contaminated

VS with workstations → Replace workstations with PCs → Network PCs with LAN → Heterogeneous mini/PC/LAN environment

Qualifying Question

1. Are you using Wang mainly for Word Processing and other Office Automation functions?

   *If **Yes**, then we can provide a NeXT front end that gives you everything you have now plus more.*

   *If **No**, then Wang is probably being used for a custom/vertical application. [Targets #2 or #3 above]*

2. How do you see your Wang experience?

   *If they see it **positively** (enjoyed innovation; gained competitive edge; increased productivity; brought users into automation age), then they will derive the same benefits from a NeXT implementation.*

   *If they see their past departure from the mainstream to the Wang "better mousetrap" as **negative**, then they will probably want to return to the mainstream/largest installed base.*

3. Does your organization have a mandate to return to the leading edge of technology? [This isn't as hokey as it sounds; if they feel they got burned, Wang users will say No.] Do you have the budget?

   *If **Yes**, NeXT front end gives state-of-the-art technology while maintaining the Wang VS investment.*

   *If **No**, then they are probably more interested in maximizing their Wang investment and they are probably not a NeXT customer.*

4. Are you searching for a way to replace the Wang equipment? Does your department control the budget to do this?

   *If **Yes**, then the timing is right to see the state-of-the-art solution.*

   *If **No**, what do you plan to do as equipment ages and you need to fill new requirements?*

5. Does your organization need full integration of mail, voice and WP? [Many Wang users are familiar with this from Wang's FreeStyle prototype product - big on promises, short on delivery.]

   *If **Yes**, then NeXT is the only Interpersonal Computing solution that can deliver it.*

   *If **No**, then we would have to compete on ease-of-use, or they may be unfamiliar with the promise.*

Target Customers Decision Process

A typical successful selling cycle:

- *Sell the Internal Technical Advisor on the technical superiority and affordability. Most Wang systems cost about $3500 "per seat" (including shared VS resources) but provided minimal individual computing capability.*

- *With the Technical Advisor with you, sell the Decision Maker that the migration of the work process is more important than the migration of old 286 PCs already installed. Also sell on the stability of NeXT and the long-range viability of the solution.*

- *Support the Decision Maker to win the concurrence of End-User Support. Since the money will come out of the end-user department's budget, the department head is generally the final word. (End-user departments often choose to control their own budget for OA so MIS can't dictate the solution.)*

- *Sell a pilot system. They will want 2, let's sell 3 or 4 so they can see the power of interpersonal computing as opposed to just Wang OA replacement. We will also need to show Wang connectivity at this point, if only on a demo basis.*

- *Sell expansion and replacement after a successful pilot of 2 to 6 months. Wang users understand IPC, so we can sell multiple systems. Selling point for replacement: Wang workstations still worth $100 to $200, but only until everyone starts to unload them. This is where connectivity to the VS comes in as a migration path.*

6. How important is true distributed computing that allows workgroup collaboration, file exchange, data control and administration? [Wang users take for granted the value of server-based computing and are often not aware that LANs don't provide this to the degree they are used to.]

    *If **important**, then NeXT is the only desk-top based solution that can deliver like a mini-computer with the ease and mainstream apps of a personal computer environment.*

    *If **not so important**, the we would have to compete against LANs.*

Only for a high-level, OA

Wang replacement sale

Disqualifying Questions

1. Are you using Wang mainly for a vertical application?

    *If **Yes**, then we would need a NeXT solution for this vertical market? [see Target #3 above]*

2. Are you using Wang mainly for a custom application?

    *If **Yes**, then we would need the technical resources available for conversion [see Target #2]*

3. Are you using IBM clone PCs rather than Wang workstations to access the VS? If yes, do you have many DOS applications on the PCs?

    *If **Yes**, then we would need the DOS apps, their counterparts or SoftPC available on NeXT.*

4. How important is low cost among the factors considered in your organization's buying decision (i.e. functionality, productivity, innovation)?

    *If low **cost is more important than functionality**, then this is not the right customer. (They will probably tend towards DOS clones as terminals and for standard DOS apps.)*

5. Are there other OA solutions in your organization and what is management's directive on multiple OA platforms?

    *If **multiple solutions are not allowed**, then we would have to sell management on a conversion from all Wang to all NeXT.*

6. Are you involved in high volume imaging apps?

    *If **Yes**, then this is probably a new system and IBM will provide a long-term migration path. If it's a low volume apps, our BOSS Logic might work: call Ken Rosen for details.*

Key Requirements of the Target*.*

We are selling the office of the CEO and the departments that support the CEO. These are the departments that used to be responsible for all the paper memos and are now moving information around the corporation electronically:

- headquarters departments receive reports, issue directives and analyze financials;
- legal departments advise the CEO and monitor outside counsel;
- human resource departments correspond with benefit providers, analyze trends, write to employees;
- communications departments fax PR agencies and the media and publish stockholder reports.

They need easy-to-use tools that have the power to produce complex and professional results. They see themselves as executive analysts or benefits managers or PR specialists: not technologists. They don't have the time or desire to study computers and they think basic office functions like word processing, spreadsheet and mail should be extremely simple even for the casual user.

How Wang met user's requirements... but failed to keep up.

Wang VS positioning:

- The VS was the logical outgrowth of their stand-alone word processor and calculator business.
- A simple to use office tool that not only meets the needs of a modern office, but also increases productivity.
- A commitment to a centralized source for files, apps and services for ease of maintenance (backup, etc.)

The Wang sales force seldom called it a computer, preferring simply "The VS," after introducing it as a large word processor with many other functions. They found that the word "computer" either triggered computer-phobia or made them call their MIS department for an interpreter, both deadly for the short-term sale, which was Wang's norm.

Wang delivered:

Wang delivered what they promised - an easy to use and maintain, shared system with the best word processing. They were responsive to their installed base and expanded

> .
> *OFFICE bundled networking, mail, calendar and scheduling, personal organization tools, addressing, etc. and integrated it with text, files, WP and their new, advanced WP Plus. It can be customized for each user, so it's not easily recognizable to a non-Wang user. Probably 50% of our target market is using OFFICE. See Page 11 for specific functionality & corresponding NeXT offerings.*
>
> *FREESTYLE was promised 3 to 4 years ago at about $20,000 per seat. It was a PC with a GUI and most of what is standard on NeXT with the addition of a stylus and tablet for handwritten annotations to documents. Few sites bought it and now Wang is selling it as a software package. for a Windows/286 configuration for $995.*
>
> *OIS and ALLIANCE are older Wang O/A systems that are not based on the VS CPU. We can not communicate with them: they would have to be replaced by NeXT.*

their WP leadership into one of the first full-featured OA systems, named OFFICE (see above for description), which was introduced in 1985.

The Wang VS is actually a mid-sized mainframe patterned after the IBM 370 with the exact same internal instruction set. It has a Wang-proprietary Operating System that's as powerful as IBM's MVS, but much easier to operate and maintain. Each VS can support multiple intelligent workstations (up to 200 on the larger VSs) that are really fast because of the division of processing between the workstation and CPU. And VSs can be easily networked for data and mail exchange and for running apps on other VSs. Although the VS is easily programmable in all languages, custom development was rarely mentioned during the sales cycle.

This was fine until the PC revolution when competitors caught up and moved ahead...and Wang didn't. Wang promised (and showed) integrated mail, voice, word processing and file management in their FreeStyle product (see description above), but couldn't deliver either a final product or a reasonable price. Wang is now building their marketing strategy around OFFICE 2000 - a rerun of OFFICE with the promise of being an "open system" running on multiple platforms (see their ad in the appendix).

Wang failed to deliver advanced integration, WYSIWYG, open systems or anything significant for the past 5 years and the installed base is angry at Wang's unresponsiveness.

The sale to replace Wang can't be as simple as Wang's initial sale because the buyer is more sophisticated. However, this still needs to be an uncluttered sale concentrating on what the end user (not MIS) needs and wants:

- Full Integration of mail, voice, WP and files
- Industry Standard "brand names", especially Word Perfect, Lotus, & Unix
- Centralized Resource Management (for files and back-ups)
- Smooth Migration Path from Wang

The following chart shows how we translate the current Wang solutions they know into NeXT offerings.

Current Requirements and NeXT Solutions

Mapping Wang Solutions to NeXT Solutions

What They *Need*	Wang Provides	NeXT Provides
Word Processing (Many use both Wang *and* PC)	WP, WP+ (or WordPerfect)	*WordPerfect* - considered the industry-standard by Wang users
Document Transfer and Conversion from Wang WP	Doesn't apply	MacSoft *LightSpeed* file translation via their PC gateway *(Best alternative when NeXTstep front end available in 2/91; 805-324-4291)* Wang Ethernet card in VS, plus Wang TCP/IP and FTP. Use *Touch* to get software and convert using *SoftPC* plus *KeyWord* (below). *KeyWord* runs on DOS, Sparc & Mac and converts from WP to WordPerfect (403-250-1770)
Document Management	Central Filing, Security, Retrieval by Author/Operator	UNIX file system and protection BOSS Logic *BDMS* Document Management System
Spreadsheet	20/20 (or usually 1-2-3)	Lotus *Improv* — 1-2-3 compatible and more powerful
Fax	Office Fax (From the desk-top already)	Integrated In- & Outbound Fax (Good point vs. PCs: Many Wang users have now and don't want to lose.)
Mail	OFFICE	MM NeXT Mail *(MacSoft OFFICE mail gateway available Q1, '92)*
Mail Gateways to IBM Profs & DEC All-in-1	OFFICE to Profs & All-in-1	Worldtalk 400 X.400 gateway
Productivity Tools: Calendaring/Scheduling Reminders, Rolodex	OFFICE	*Who's Calling* by Adamation; *Roomz* *OnDuty (Available Q1, '92)* by DIT
Wang VS access for old apps		NeXT logon to VS using *Lightspeed* with GUI for using old apps
Mainframe access for corporate-wide apps	3270 & SNA	3270 & SNA with cut & paste integration
Access to varied networks	Banyan, Novell	Novell, Banyan, AppleShare
System Maintenance Tools	Backup & housekeeping	NeXTstep sys admin tools; but mainly in Unix for now *(GUI backup utility: Q1,'92!)*

Future Desires and NeXT Solutions

What They *Want*	Wang Delivers	NeXT Delivers
Productivity improvements	Office	Full integration: mail, voice, WP, files Premier "mainstream" productivity s/w
Ease of use	Menu-driven, keyboard based	NeXTstep point & click GUI
Industry standard software	Wang wrote VS software Non-integrated packages on connected PCs	**Applications**: Word Perfect, Lotus, SAS, Adobe Illustrator, WriteNow, FrameMaker, Mathematica, T_eX **File Formats**: DOS, Postscript, TIFF, RTF **Languages:** C, Cobol, Pascal, Fortran **Databases:** Oracle, Sybase
Open systems to ensure interoperability	Promising migration to Open Systems	**Standards!: Unix**, SNA, 3270, Novell, Banyan, Asynch, Ethernet, TCP/IP, SMTP
Imaging and Image File Management	WIIS (Wang Integrated Imaging System) & APIs to more	Boss Logic BDMS Visus PaperSight Insight Software Electrofile
Innovative technology	They once were!	Multiple industry awards, reviews, etc.
Stable vendor committed to service and technology		Standard Viability story: Success stories, sales increases, brand name 3rd parties, financial partners, etc.

Solution Definition

We need to stress that only NeXT offers a path to the future without changing the way they work—an easy to use migration path out of the Wang world without losing the server-based collaboration and services they've come to take for granted. NeXT provides a fully integrated environment that insures the

- open systems and productivity gains from full integration that they ***need***, the
- ease-of-use and industry standards of WordPerfect, Lotus, Unix that they ***want***, with
- smooth migration path from Wang's proprietary system that they ***can't live without***.

All by putting a NeXT front-end on the Wang VS.

The detailed places that NeXT stands out over other potential Wang replacements are:

- file sharing via a great UI to the server (critical to a Wang market that takes sharing for granted)
- IPC productivity gains through the integration of mail, voice, apps and files
- easy to develop custom applications
- smooth migration path using *Communicae* now and *Lightspeed* later.
- industry-standard Word Perfect and Lotus with friendlier interface
- easy-to-learn GUI consistent between all apps (even custom apps)
- easier-to-use and more powerful mail
- Unix and standard networking (For the vast majority of Wang users, interoperability plus WordPerfect will put NeXT squarely in the world of open systems)

IPC Starter Pack

The IPC Starter Pack is a great fit for the Wang market— they're interested in productivity tools AND they inherently understand IPC already!

Wang to Word Perfect Conversion.

Combines NeXT hardware with some of the most popular productivity applications available, NeXT education and support resources, and direct phone access to NeXT Customer Support. The "new" Starter Pack plan that lets you build a 3-pak based on whatever configuration the customer desires; however, the typical Wang Replacement requirements are fairly low end systems. Monochrome is what they've had before and, since they will be storing files on the server, relatively small drives are sufficient.

> *The key part of the solution is WP conversion. There are several software packages that convert Wang WP to Word Perfect in batches or individual documents. Three conversion processes are:*
>
> 1. *When available 4/92, use MacSoft PC gateway with NeXTstep front-end to transfer and convert files from VS.*
> 2. *On a DOS PC attached to a VS using a WLOC/928 connection, run a software package, either Pride from MCS or LightSpeed from MacSoft to transfer & convert documents. Wang file ID will become file name.*
> - *Transfer converted document to NeXT via Novell or Floppy and open in WordPerfect*
> 3. *Use Wang Ethernet card (802.3 Integral LAN Controller) combined with Wang TCP/IP stack to connect to NeXT network. Use FTP to transfer.*
> - *Convert using KeyWord's Keypacl on a Sun or under SoftPC. Need to transfer files into SoftPC partition and then transfer converted files back out.*

***See the Starter Pack information for details on hardware and
software.*** In addition, Wang users will need:

1. *Communicae* if basic terminal emulation is sufficient (note that PF keys are not
   supported—fine for many applications but unfortunately not for OFFICE). In 3/92
   switch to MacSoft which will support PF keys via "virtual" keyboard on display.

2. *Lightspeed* for Wang to WordPerfect Conversion (runs on DOS now,
   NeXTstep front-end through PC gateway in 2/92

3. Games for non-threatening practice with mouse

4. Document Manager (Optional: BOSS BDMS should be very attractive to
   advanced users will distinguish us from PCs.)

Current Environment

Base Configuration: Most sites started with a Wang VS connected to intelligent Wang
workstations using coaxial cable with BNC connectors, called "928" among Wang
users.

Expansion Configuration: Over the last few years most sites filled new requirements
slowly by buying 286 IBM-clone PCs and connecting them to the VS with a WLOC
(Wang LOcal-area Connection) card in the PC talking through twisted pair with a
BNC connector.

LAN Configuration: When they no longer had the resources available (number of
simultaneous logons, disk space, etc.) on the VS, rather than upgrade the VS, they
added new 286 PCs on a LAN (usually Banyan, but more recently Novell) which was
connected to the VS.
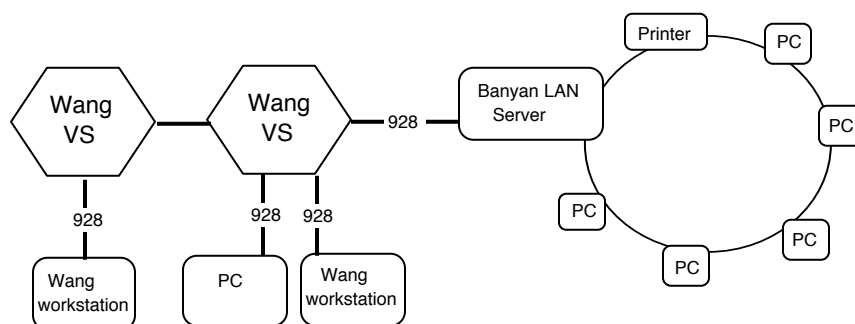
*The problem with Wang
user's current environment:*

Problem: The LAN solution is perceived as short term because it is still built around
the VS. They don't see an upgrade to 386's as buying them a future direction because it
is still dependent on the VS for applications and ***a 386-based LAN without the VS
can't provide the power of a centralized database and application server***.

This is where they are now: not satisfied, but continuing implementation of PCs
because it's the path of least resistance. We can stop this by showing

- the limitations of the PC LAN in centralized functionality, collaboration, and ease of use
- Since all 286's must be inevitably upgraded use Windows, a NeXT implementation is no harder or more expensive

NeXT to Wang Connectivity Solution

The diagrams below show our 3 solutions. At this time, only solutions #1 and #2 are available and they do not have PF key mapping. Therefore applications requiring PF keys (and unfortunately Office is one of these) can't run yet. [Amazingly, there is no NFS implementation for Wang even thought they do have TCP/IP.]

Cheap solution to prove connectivity, but poor reliability.

1. Low level Terminal Emulation through a Asynch port (available *now*)

    Applications (Terminal Emulator): *Uses SoftPC running M/H Group's VsCom ($195) for cheap serial connection and Wang 2110 Terminal emulation. VsCom supports PF keys so that users have a Wang-like user interface. For File Transfer and translation, use M/H Group's package for that adds file transfer ($345) . It requires their MHUtil ($345) running on the Wang. However, because it is serial, only one person can use the system at a time and performance is poor. Therefore, only useful for the most basic of needs as a transition. [M/H Group info in "Sales & Distribution Partners" section.]*

    E-Mail: *No connection to NeXTmail app. Of course, users can go into Wang Mail through VsCom and exchange mail with other Wang users.*
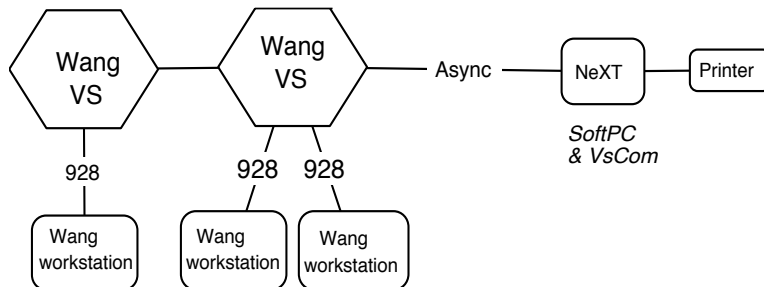
Better performance and mail now possible. But no Wang UI for the Wang apps, so not for end users.

2. Low Level Terminal Emulation & Character-based Email through Ethernet (available *now*).

    Applications (Terminal Emulator): *Terminal interfacewill purely a command line connection to the operating system. Handles administration and file manipulation—Users* cannot *run Wang WP or WP+ word processors, Wang office, calender, etc.*

    Not generally useful for any non-technical users--administrators only. The above solution (#1) should also work via ethernet; however, the one time NeXT people have tried this set up, it would not run. If possible to use ethernet, the solution is faster, more reliable than #1 above and supports multiple connections. However, because Wang's implement of telnet is weak, the fairly low level of functionalty is similar for administration is similar.

    E-Mail: *Character-based ("Non-NeXT") mail* **does** *work between Wang Office Mail and our NeXTmail app via ethernet. Attachments can be included, but with NO translation. Would need to write a filter to do the conversion. Initially, this would require a NeXTedge custom development contract; however,* **M/H Group** *is Chicago began work in January '92 on a conversion product called* **VsCom/LAN***.*

File transfer: *Consistent with FTP. Binary and ASCII file transfer works with FTP primitives at command line.*
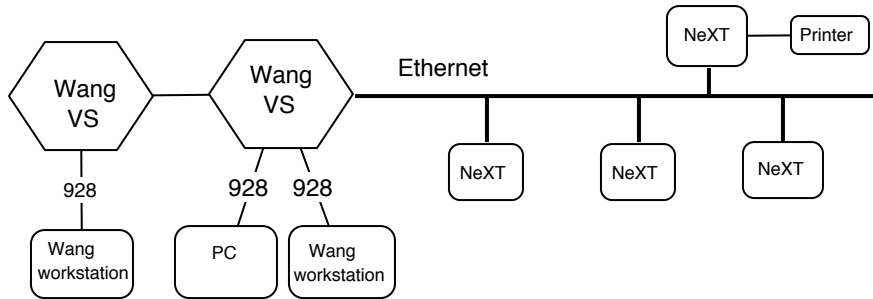
Configuration #2 requires the following from Wang: a VS with 4 MB memory and OS 7.20 or higher, a 802.3 Integral LAN Controller card (50V65A) for $2000 and the TCP/IP Protocol Stack software with SMTP (VS TCPINT-H-7) for $1500.

*This gives NeXT a Wang-like interface and maintains the VS investment.*

3. True Wang 2110 Terminal Emulation through MacSoft's LightSpeed (available April/May, '92)

Applications (Terminal Emulator): *Only alternative that provides a Wang look and feel within a NeXTstep window—even supports PF function keys. Also handles file transfer & translation between Wang WP or WP+ and WordPerfect or ASCII. WARNING: While Wang mail, Wang Office (including calendering), custom apps, and most other Wang based applications work fine, Word Processing (WP or WP+) DOES NOT WORK via terminal emulation. This is because Wang uses microcode from the Wang-brand terminals in these programs. (True for PC's doing emulation also.) Users translate WP or WP+ file to WordPerfect, make changes, and translate it back if necessary.*

File transfer & translation: *NeXT-style browser to find VS-based apps for transfer & translation.*

Wang Office Mail: *If you use the Terminal emulator to log onto Wang Mail, it, of course works completely as expected.*

NeXTmail to Wang mail: *May'92—Just like configuration #2, requires extra ethernet cable (as shown below with extra cost of ethernet card and second physical wire). FUTURE (~7/92)—MacSoft revision will let users send mail to/from NeXTmail & Wang mail. They can even add attachments which are transparently translated. The extra ethernet cable in the diagram below is no longer needed.*
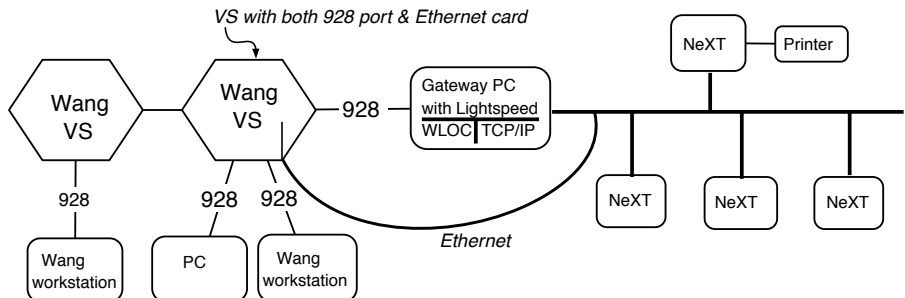
Hierarchy of Wang

connectivity requirements

Wang/NeXT connectivity hierarchy summary

Functionality Required	Diagram Above
NeXTmail to/from Wang mail with transparent file translation	#3 (7/92)
NeXTmail to/from Wang mail with attachments (No translation)	#2
File Transfer & Translation (via a NeXT-based application)	#3 (5/92)
Character-based Wang Mail to/from NeXTmail application	#2
Wang mail to/from Wang mail via NeXT terminal emulation	#3 (5/92)
Wang 2110 Terminal (Wang UI for Wang-based applications)	#3 (5/92)
Robust Terminal Emulation, but to OS only (No Wang UI)	#2
Simple Low Speed, One-person Terminal Emulation	#1

Success Stories

Morrison-Knudsen

The large construction corporation, Morrison-Knudsen, has 10 Wang VSs networked together throughout end-user departments doing OA. One of these departments bought NeXT in 1990 to provide a fuller featured IPC than that offered by Wang.

They tried and rejected Macs because they found the NeXTstation "much easier to use" and the Mac had "poor fax quality". Plus it was easier to get political acceptance for NeXT because UNIX is industry standard and Apple is not. They also found NeXT's pricing better than Macs or DOS PCs for a 16 inch monitor.

They want to keep their VSs because the financial applications on the VS let them get their month-end reports submitted days before departments using the mainframe. In this case, the VS makes them look good.

They perceived Wang's OA as old technology and chose NeXT for it's GUI, ease-of-use and Word Perfect. They use NeXT's Fax feature to send Purchase Orders and other documents with their corporate logo, saving the steps of printing on letterhead and manually faxing.

For office productivity, they find NeXT is far more flexible for long-term use. They are now considering putting clusters of NeXTstations at 9 sites because of NeXT's excellent IPC. In the sales process the Internal Technical Advisor was Jim House, who continues to be of NeXT's great advocates.

Morrison-Knudsen did not need tight integration of their NeXT systems with their Wang VS systems at first, so the only connectivity they used was the terminal emulation via the serial Asynch port. They are now looking at closer connection and planning to use the MacSoft LightSpeed gateway.

Competition

Industry analysts think that 25% of the installed base will switch to the AS/400, probably because of the safety of the Big Blue decision. The solution that Wang users want to buy is a standards-based, open system for IPC. Wang users will rate our success at achieving that solution as follows:

Feature	Success Rate	Wang Users Issues
Word Perfect	100	Most users consider this the WP standard
Lotus Improv	60% to 100%	Not 1-2-3: based on compatibility and functional superiority, Improv may be better

Unix	50% to 100%	Depend on their belief in Unix as a standard
VS Logon	75% to 100%	Requires Ethernet, asynch or 3rd party package
Mail Exchange	75% to 100%	Requires 3rd party package

The overview of the competition we'll see the most in this market is listed below. Keep in mind that IBM is clearly going after this market with a variety of solutions, such as PC, AS-400 and RS-6000. See the Appendix for a detailed Competitive Analysis.

Platform	Strengths	Weakness for Wang Users
Macintosh	Good asynch, AppleTalk connection	No mature networking
	Familiar, may have at home	Seen as toy, not as "office standard"
	Original easy interface	No centralized resources
DOS/Windows	Perceived as industry standard	No centralized resources
	Perceived as easiest migration path	Requires more admin staff
	Large PC installed base	Not fully integrated
	Low price of PC clones	High price of GUI software upgrade
AS-400	Same work style as Wang menu-driven, keyboard-based	Weak productivity software
	"Safe" decision	Proprietary platform
Sun	Perceived Unix leader	Difficult to use
		Not business oriented
		Will not be our typical compet. here

Competitive Overview

Feature	NeXT	IBM AS/400	IBM RS/6000	IBM PC Windows	Apple MAC	SUN SPARC SLC
Integrated Audio	●				◐	◐
Integrated Fax	●			◐	●	
Integrated Graphic User Interface	●			◐	●	◐
Diskette Options	● NeXT, DOS, Mac	◐		◐ DOS only	Mac, DOS	
Standard Large Megapixel Display	●					
Unix	●	●	●			●
Built-in, Standard, High Speed Network	●		●			●
Built-in Easy-to-Use File Sharing	●	◐	●			●
Central Resource for services, files, & apps	●	●	●			●
Rich Bundled Apps	●				◐	
Smooth Integration between Apps	●			◐	●	
Best Features	Fully integrated IPC	Safe & Low Cost Terminals	Safe & Low Cost Terminals	Perceived as standard	Perceived ease-of-use	Perceived as Unix leader
Worst Features	Newest of Mainstream Platforms	Poor UI; No mainstream productivity tools	Poor UI; Not business oriented	No distributed computing; expensive	No robust networking or file sharing	Poor UI; Not business oriented

Legend: ● Best Implementation   ◐ Minimal Implementation

Selling Partners

For file transfer and
conversion

MacSoft
1800 19th Street
Bakersfield, CA 93301
(805) 324-4291
Attn: Eric Schwocho or Rob McCarthy

MacSoft's *Lightspeed* product will run on the NeXT and makes Wang VS applications appear in a window, including support for PF (Program Function) keys.

Lightspeed provides a migration path from Wang system by allowing users to use required apps on the VS while migrating IPC to NeXT. It provides Wang VS terminal emulation, file transfer, Wang WP to Word Perfect transfer and conversion. The are also developing mail exchange between Wang Office and NeXT Mail.

MacSoft has been a Wang Software Developer for 8 years providing connectivity products to the Wang community nationwide. *Lightspeed* also supports DOS PCs and Macs and they have a significant and referenceable installed base in our target market.

Lightspeed for NeXT will begin shipping in May 1992. It will cost between $2000 and $18,000 based on VS CPU size. (E.g. Cost $10,000 for the VS7100 series that supports about 128 users.). The revision to include mail services with transparent file attachment conversion will ship about July, 1992.

For file transfer and
conversion until MacSoft ships

M/H Group
222 West Adams Street
Chicago, IL 60606
312-443-1222

M/H Group develops and sells software for PC to Wang VS communications They are working on a NeXT port, but their products currently work under SoftPC. Currently this is a transition on the way to MacSoft's product. However, once M/H completes their port, we'll need to reevaluate.

VsCom for Terminal Emulation with PF Key functionality sells for $195. VsCom for Terminal Emulation and File Transfer sells for $345 and requires their other package MHUtil ($450) running on the Wang VS.

For development assistance
when Wang technical
experience is needed

Diane Daniels
TIOC
1450 Greenwich Street
Suite 503
San Francisco, CA 94109-1466
415-771-4090

Objections

"Is NeXT viable as a company?"

When the Wang decision was made, Wang was the small, upstart with the better solution challenging the big players — IBM, DEC, HP, DG. The solution was proved better, but Wang didn't have the staying power.

We are in a similar situation except we have the answer Wang didn't - we are an open system based on standard applications and standard networking. (Also use customers to show increasing strength and reference issues from the old Viability document.)

"Why not use Windows?"

(This is the perceived path of least resistance).

Windows can't give you centralized resources, advanced networking and true integration between apps. Windows requires excessive memory and horsepower, and it is inconsistent when switching between apps. The DOS/LAN configuration can not give you the powerful distributed computing you take for granted on the VS.

(Wang sites are already disenchanted with the administration required for the LANs they've attached to the VS: the percent of system administrators to users is significantly higher for LANs than the VS. This was an unanticipated cost when the LAN decision was made and reflects the operating system deficiencies of the DOS/LAN solution.)

"I need great tools for handling the system."

No only do we have the standard Unix tools, but third-party developers have created creating NeXTstep UI versions of many administrative tool, including system back-up applications. Also, the system itself supports many of the things that administrators used to worry about, for example, release 3.0 has encryption built right into the mail system for increased security.

(Wang sites are used to tightly controlled system administration, which is very easy on the Wang VS. They want the housekeeping functions like security, back-up, disk maintenance to be easy and preferably automatic, like backups run at a specified time each night.)

"This is great, but we only buy Open Systems."

NeXT systems are based on all the most important industry standards (push Word Perfect, Lotus, Unix, ethernet, TCP/IP, etc. and use "NeXT and Open Systems Standards" white paper. Note that Wang users are generally not familiar with Unix and might think that there is a "standard Unix", not ours. If this comes up, we need to educate them on the different flavors of Unix, the similarities, differences and portability issues, and stress that there is no standard Unix.)

"I'm a whiz on the keyboard; won't a mouse slow me down?."

NeXT provides keyboard alternatives to point-and-click selections. However, as users become more familiar with mouse operations, point-and-click increases productivity because of the large number of features that can be browsed quickly with a mouse.

Demonstration Outline

Again, we need to stress that NeXT provides a fully integrated environment that uses a networked server-based system to ensure:

- open systems and productivity gains from app. integration that they ***need***, the
- ease-of-use and industry standards of WordPerfect, Lotus, Unix that they ***want***, with
- smooth migration path from Wang's proprietary system that they ***can't live without***.

The good news is that the "standard" NeXT mailbox demo (including a look at WordPerfect and Lotus) is exactly what these customers need. The only change should be greater stress on the collaboration between *home directories in the Workspace Manager and the user of the Shelf to keep documents others have created for you*.

NeXT to Wang connectivity will be critical, but probably not for the first demonstration. After seeing Demo #1 the Internal Technical Advisor will probably be excited enough to work with us on setting up demo #2.

Demo #1

NeXT Ease of use

The main point of demo #1 is to show the ease-of-use of the NeXTstation to the Internal Technical Advisor, the User and, if possible, the Decision Maker. Use the Standard NeXT mailbox, but the 6 most important items to this audience are:

1. **GUI** - Many Wang users are not familiar with a GUI, icons, mouse, etc. but they are very good on a keyboard. They need to be shown how these new tools can make their work faster and easier. This is best shown by pointing out the large number of options that can be quickly browsed using point-and-click. Word Perfect is a good example because they have been used to keyboard templates with confusing combinations of keys to perform an operation.

2. **Word Perfect** - Many Wang users are familiar with Word Perfect, but not with a WYSIWYG screen. They need to be shown ***pull-down menus***, ***point and click versus PF keys*** for editing, ***fonts*** and ***printing/faxing***. They will likely want to know that menu commands have keyboard options. Advanced users will be interested in the Inspector and the Ruler.

3. **Improv** - Wang users who have used a spreadsheet need to see the ease-of-use of Improv, in particular the ***variable cell names***. Wang users who have never used a spreadsheet should be asked if they are interested so they won't be confused unnecessarily.

4. **Mail** - Most Wang users have Office Mail or are familiar with E-mail. The points to emphasize that distinguish NeXT mail from Office mail are addressing with pictures; attaching voice, icons, etc., to mail "packages"; editing abilities within mail message preparation.

5. **Fax** - Some Wang users have fax with Office Mail or as a stand-alone product. They might be familiar with sending, but they probably don't receive faxes since most Wang workstations can't display them.

6. **Collaboration** - The ease of exchanging and sharing documents via the Workspace Manager, the Shelf and NeXTmail.

Demo #2

NeXT Connectivity to Wang

The easiest connection is through a Wang Asynch port that can be used for terminal emulation. The NeXTstation is connected with a null modem and VT220 terminal emulation software (like *Communicae*) is run on the NeXT. The Asynch port on the Wang needs to be configured for terminal emulation.

With this configuration, Wang users can logon to the VS using the NeXT and run Wang applications. However, the PF keys won't work, which might limit the functionality of their applications. Most Wang apps use PF keys, but many don't. With extra work in advance, the latest version of Communicae can be configured to have menus act as PF keys. General PF key mapping will be available by 3/92 with *MacSoft's Lightspeed* gateway.

The main point of demo #2 is to show that their migration path is smooth since users can run their Wang applications on the NeXT using either basic terminal emulation or a third-party software package that provides a GUI window for Wang apps. Once the connection is established from NeXT, the Wang user can logon to the Wang and run custom or vertical applications. For really industrial strength connections, however, you will need to contact MacSoft about getting a demo system for the site.