Perceptions: A Strategic Deployment of Linux in the Health Care Environment

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"Oncology care is a study in the collection, organization and interpretation of clinical information. If we can somehow master these skills we can positively impact the lives of individuals touched by this disease . . ."

— *Our Visionary*
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Perceptions —— A Strategic Overview

1 ⟶ Organizational Structures.

2 ⟶ Goals & Objectives.

3 ⟶ Open/Free Systems Justification Strategies.

4 ⟶ Project Impact.

The MMG Environment: Linux's Commercial Birthplace

— Largest regional oncology referral center between the Mayo Clinic and West Coast centers.

— Distinct service line of the MeritCare Medical Group with 4500 employees, 302 physicians and 30 regional centers.

— 13 physicians and 100 staff supported by 30 Linux workstations provide Oncology, Hematology and Radiation therapy services to approximately 110+ patients/day.

Linux first hosted patient critical applications in August of 1992 and has been solely responsible for mission critical operational support since mid-1993.

Important Features of this Environment

Support fault intolerant applications.

Extremely heterogeneous environment.

Heavy Novell/Microsoft competition.

• As Mainstream As It Gets •

Goals and Objectives: An Intranet By Any Other Name

Design Goal: A management and clinical decision support environment based on open system standards and a highly distributed processing model.

Objectives:

1 $\longrightarrow$ Develop a unified patient information access technology.

2 $\longrightarrow$ Increase clinical and management efficiency.

3 $\longrightarrow$ Optimize quality and cost outcomes.

4 $\longrightarrow$ Explore feasibility of highly distributed processing models.

Our Challenge: Demonstrate to Nay-sayers

— Platforming advantages of inter-networking technologies.

— Suitability of unix workstations as desktop agents.

— Advantage of RDS $\longrightarrow$ **R**apidly **D**eployable **S**olutions.

Superiority of modular information designs

The Battleground:

You wanna run what?

Unix/Linux, isn't that some hacker's system?

You wanna trust our data to something you got from a BBS?

Where are you going to get support?

Fine with me, but it's your ass if anything goes wrong.

Analysis of Computational Needs

Goal: Determination of unfulfilled or marginally fulfilled information processing needs.

- Should be based on the corporate strategic information plan.
- Extremely critical for successful Linux integration.

Analysis of Computational Needs —— Points to Consider:

1 —— Current hardware reservoir.

2 —— Corporate networking architecture.

3 —— Application software base.

4 —— Support staff size and experience.

5 —— “Right-sizing” plans and projections.

6 —— Stress points in current IS strategies.

Devloping a Linux Strategy —— Fitting into the Puzzle

Goal: Use the analysis of computational needs to determine where Linux has the capability of meeting or exceeding information processing needs.

Concept: Comparative **S**trategic **A**dvantage

CSA involves analyzing current implementation strategies to determine where Linux can offer a comparative advantage over current information solutions.

CSA $\longrightarrow$ Stresses evolutionary rather than revolutionary change.

Mandate: Utilizing CSA requires knowledge and understanding of the power of multi-tasking and modular solutions.

Example of a CSA Driven Strategy:

- Ascertain shortcomings in current software/network solutions.
- Analyze shortcomings to seek networking and multi-processing advantages.
- Effectively leverage Linux and RDS technology.

The Linux Comparative Advantage:

Full exploitation of commodity grade hardware.

True multi-tasking and virtual memory management.

Peer-to-Peer networking capability.

User-definable solutions.

Cost effective information solutions.***

The Attack —— Taking Linux to the Boss

Goal: Convince management that the CSA's provided by Linux will work to increase corporate and group efficiency, flexibility and competitiveness.

Stress ————————————

Cost Effectiveness.

Vendor independence and flexibility.

Staff empowerment.

Growth Potential.

Potential for internationalization.

Avoid

Excessive emphasis on standards.

Software prejudice.

“Hacker” imagery.

Concept: CYA —— Cover Your A??

Most organizations and management structures are still risk-averse. Success in this environment will ultimately depend on stressing the positive effects that Linux will have.

The perception **must** be minimized that Linux is anything other than a viable commercial-grade alternative.

The Linux Challenge: Defending One’s Heritage

- Linux is a fundamentally different platform than what has previously existed. Born of the INTERNET and the global information village its use and justification must be evaluated by indices and measures of accomplishment rather than classicalism.

Stress

Contributions from global information specialists.

Regression base far exceeding commercial equivalents.

Rapidly advancing acceptance from software vendors.

Cost effective enterprise information access/delivery platform.

Finishing Touches

- Follow good systems administration/software engineering principles.
- Educate and train staff and users.
- Maintain communications with management.
- Document achievements.

The Perceptions Bottom Line: Impact of Free Software

- Cost increase of 20% supported a total productivity increase of 75%.
- Documented $400,000+ per year impact to the service line unit.

Good tools $\longrightarrow$ **Re-engineering** $\longrightarrow$ **Efficiency** $\longrightarrow$ **HCIA**

Kindest Acknowledgments To:

Mad Dog, Linux International and the USELINUX Committee.

Dr. Paul. S. Etzell, MD and Mrs. Phyllis Hummel, BSN, MS.

My dearest wife Jeri Lee (Back of Room.)

Linus Torvalds and the Linux Activists.

"I'd rather spend 10 hours reading someone else's source code than 10 minutes listening to Musak waiting for technical support which isn't."

— *G.W. Wettstein & the ORDCF*

"'Tis better to rule in Hell than serve in Heaven."

— *Lucifer from the writings of Milton.*