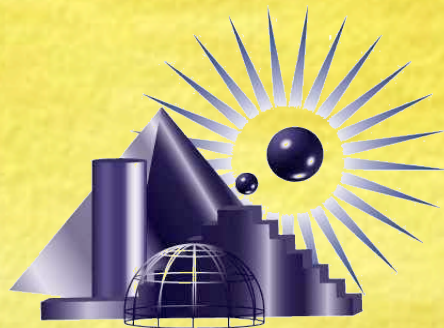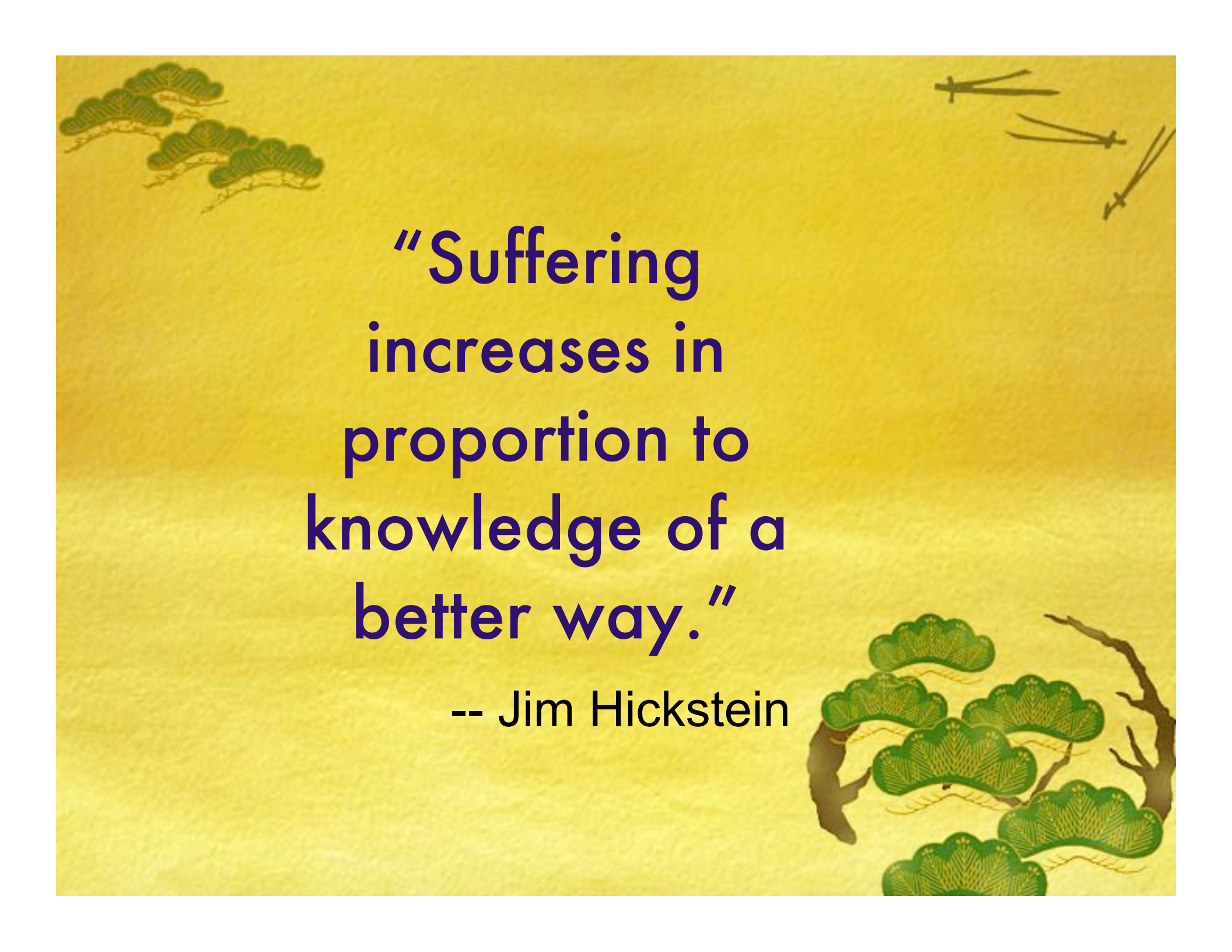# Under 200:
Applying IS Best Practices
to
Small Companies

Strata R. Chalup,

Virtual.Net Inc

"Suffering increases in proportion to knowledge of a better way."

-- Jim Hickstein

Perspective

- Our jobs: crisis-driven & reactive
- Our goal: results-driven & proactive
- Many folks have never *seen* what a successful, smoothly-running, big-company shop can accomplish
  - Not all big-company IS groups do this, it's more rare than you might think.

Does it Work?

- Have used these methods to help small shops bootstrap up from 'daily emergency' mode to normal operations
  - Not "CEO can't sync his phone" emergencies, we're talking "all or part of Engineering can't work" emergencies
- Not just anecdotal
  - We have the helpdesk graphs!

Working Smarter <u>and</u> Harder

2005 Track-It Ticket Activity

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Opened	93	53	95	68	95	81	143	193	174	196
Closed	125	53	70	72	97	88	109	183	171	214

Why "IS" instead of "IT"?

"When we use the term Information Services, we remind ourselves that we are _providing a service_, rather than merely supplying technology."

-- Paul Evans

Information Services

- Providing a mix of services
- Supporting business priorities
- Our customers are peers & colleagues

Small-Shop IT Patterns

- Janitor's Closet
  - "Somebody spilled something in Cube 21. Get down there fast."
- Frankenstein's Lab
  - "Fool! Haven't I told you never to disturb me in the lab?!" "But Doctor! The creature has escaped again!"
- Palace of Wisdom
  - "I petition thee, o Great One, for a replacement optical mouse."
- Cargo Cult
  - "I will return to the place from whence help once came."

Attitude Adjustment

- Future-paced, not present-reactive
- Things will never get better unless you make them better!
- Roles, not Personalities
  - Create staff list, don't use personal email for incoming issues.
  - Create hats, so that you can put them on people as you staff up!

Access

- Sudo & escrowed root
  - NIS 'escrow' acct for true root transparency
  - Populate IS staff onto local /etc/passwd
  - Get root away from the engineers!
- Sysconfig account or equivalent
  - Isn't this a 'shared account' (eg, bad)?
  - Cfengine or similar if you prefer, and better too, but 1st pass good
  - You will *need* this to accomplish many things!

Modularize, Standardize!

- To use group quotas, must have NIS groups: none existed
- Mailing lists maintained by hand, not by hierarchy
  - Staff vs SJC-staff vs SFO-staff etc
- "Touching the PC is Like Touching the Elephant"
  - Develop standard debugging procedures.

"Fixing" the License Server

- No more surprises
  - Expiration complainer
  - Quarterly license meetings
- Enforce use of change control, tickets
  - Isolate the daemons
  - Add "4: Update License" to ticket priorities
- "Edli" script to edit license files:
  - Does the SCCS steps
  - Prompts for comment
  - Kicks the daemon with lmutil lmreread
- Make it easy to test
  - Script displays monitoring commands to run

Building a Knowledge Base

- Document Repository
- Wiki
  - Ticket system solutions
  - Protected area for IS-specific stuff
- Staff email list archives
- Mail archives of 'items of interest'
  - Vendor tool updates
  - Security announcements

Staff Email List

- Get one asap, even if you are a staff of ONE
  - Decouple your individual email address from the IS function.
- Remember to adhere to any mail retention policies when you archive!

Change Control

- Change control *everywhere*
  - No excuses! Script it if it's too much trouble!
    - Such as edli script example for license update
- Plenty of freeware tools
  - SCCS, RCS, CVS, Subversion
- Engineering may not want to pony up for licenses for their tools
  - But asking is a great way to be taken seriously!

Policy

- Think of it as static change control
  - E.g., a baseline
- Shields you against arbitrariness
  - Real or perceived!
- A way to leverage your manager
  - If you are constantly besieged with requests that violate a policy, it's time to <u>revisit the policy with upper management</u>.
  - Let them be the bad guy

It Won't Happen Overnight

- Reversing Entropy is Slow and Difficult
  - More so while doing crisis management
- Don't try for a perfect environment from day one
  - Do make sure that any major efforts go into a sustainable environment
- Don't use that as an excuse to prioritize infrastructure over support
  - "Just one more one-off server" vs "Pull an all-nighter and throw together a Kickstart environment"
  - Do the one-off; you'll blow your credibility and your trust reservoir if you roll out a broken Kickstart

Customer Focus

- Maintaining a Stockroom
- Keeping Office Hours
- Leveraging the Ticket System
- Tracking Requests

Maintaining a Stockroom

- Endless walk-in requests for small stuff: cable, mouse, media, etc
- People won't remember that you were here all night adding disks for the big build
  - They'll remember they needed a ten dollar part and you didn't have it!
- Use tickets or an inventory board to keep stock refreshed
  - Use catalogs to order
  - Sure, a Fry's run is fun, but stay focused. Going home on time is *more* fun, really.

Keeping Office Hours

- "Poor Man's Helpdesk"
  - People know when/where to find you
- In an unresponsive IS environment, people insist on face to face.
  - You fix it to make them go away.
  - Besides, hiding in the machine room is like 'Not Being Seen' in Monty Python!
- Increased visibility is the flip side of being able to take project time

Metrics: Just Say Yes

- Helpdesk
  - What we've seen so far, plus response time and categories of problem
- The Standard Stuff
  - Uptime / Heartbeat of Services
  - Disk Usage / Availability
    - Deserves its own line in a small company!
  - Performance
    - Network, NFS, round up the usual suspects
- Company-specific stuff
  - Bandwidth usage
  - License usage & checkout patterns
  - Service touches
    - CVS check-in, intranet hit, your service here

Leveraging the Ticket System

- Everything goes into the ticket system.
  - No, *everything*.
- Forward direct email.
- Document drop-ins & calls.
- Especially include project-based infrastructure work!

Did I Say "Everything"?

IS Services Report

Strata R Chalup, Consultant, Virtual.Net Inc
v2.2, 11/9/2005

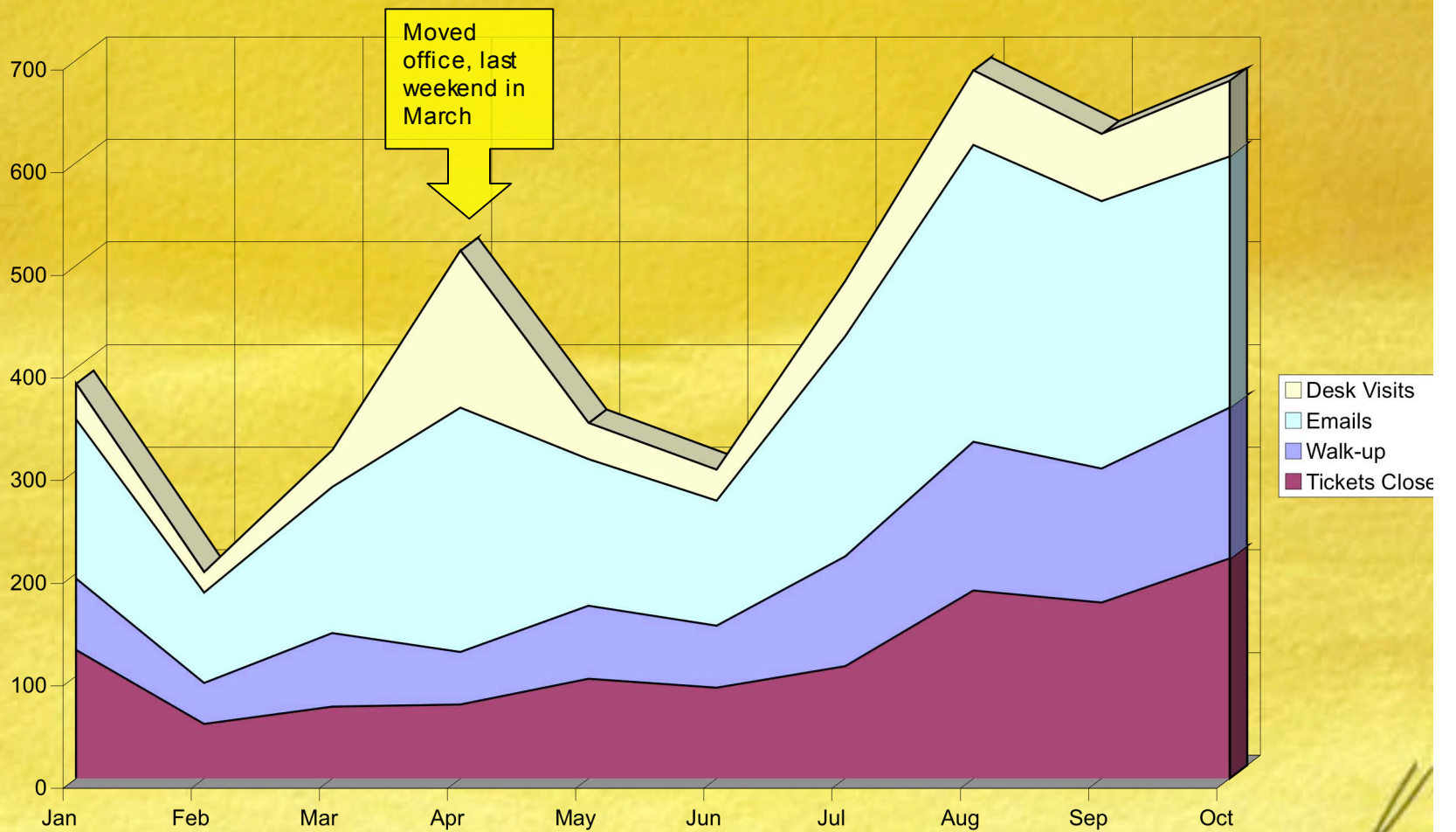|		Track-It	Walk-Up	Email	Visit	Totals	Closed
2005	Jan	93	70	155	35	**353**	125
2005	Feb	53	40	88	20	**201**	53
2005	Mar	95	71	143	36	**344**	70
2005	Apr	68	51	238	153	**510**	72
2005	May	95	71	143	36	**344**	97
2005	Jun	81	61	122	30	**294**	88
2005	Jul	143	107	215	54	**518**	109
2005	Aug	193	145	290	72	**700**	183
2005	Sep	174	131	261	65	**631**	171
2005	Oct	196	147	245	74	**662**	214
2005	Nov		0	0	0	**0**	
2005	Dec		0	0	0	**0**	

Walk-up visits are for cables, parts, media, etc and tend to be proportional to ticket activity in general.
Each Track-It request also involves 2 - 3 direct customer emails on average.
Around one-third of requests require a visit to the customer's cubicle,lab, or office.

Don't Be Afraid to Graph!

- Things jump out in graph form that slide right by in a spreadsheet
- If you are looking at *everything*, you may miss the critical relationship
- This is why a tracking tool with built-in reporting and graphing is useful in a small shop
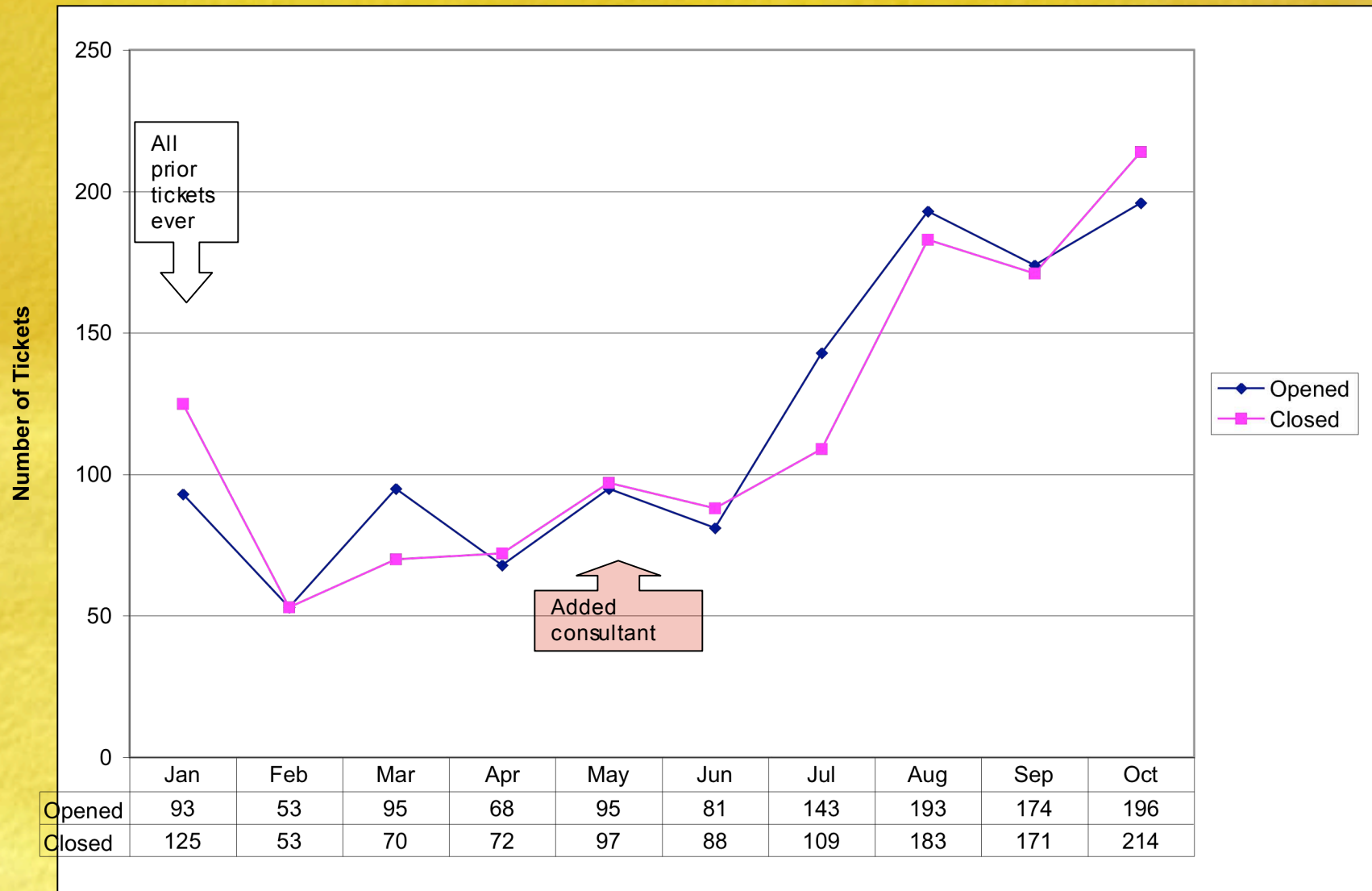 - Canned views serve as training aid
  - And provide quick feedback

Adding Personnel

2005 Track-It Ticket Activity

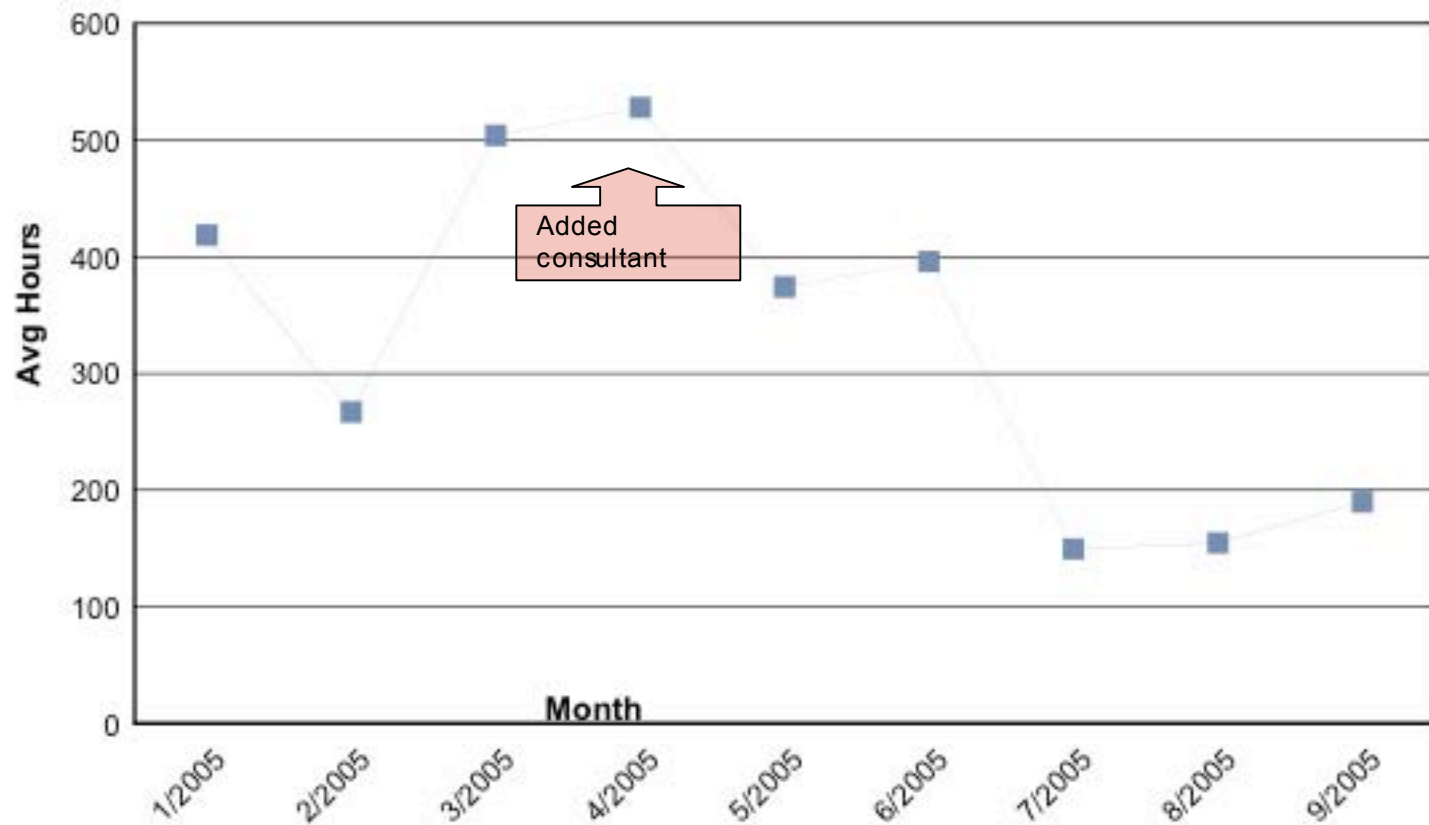|	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
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New Person, Faster Response

Average Time to Complete Work Orders by Month

Dates displayed in **Pacific Daylight Time**

From: 1/1/2005
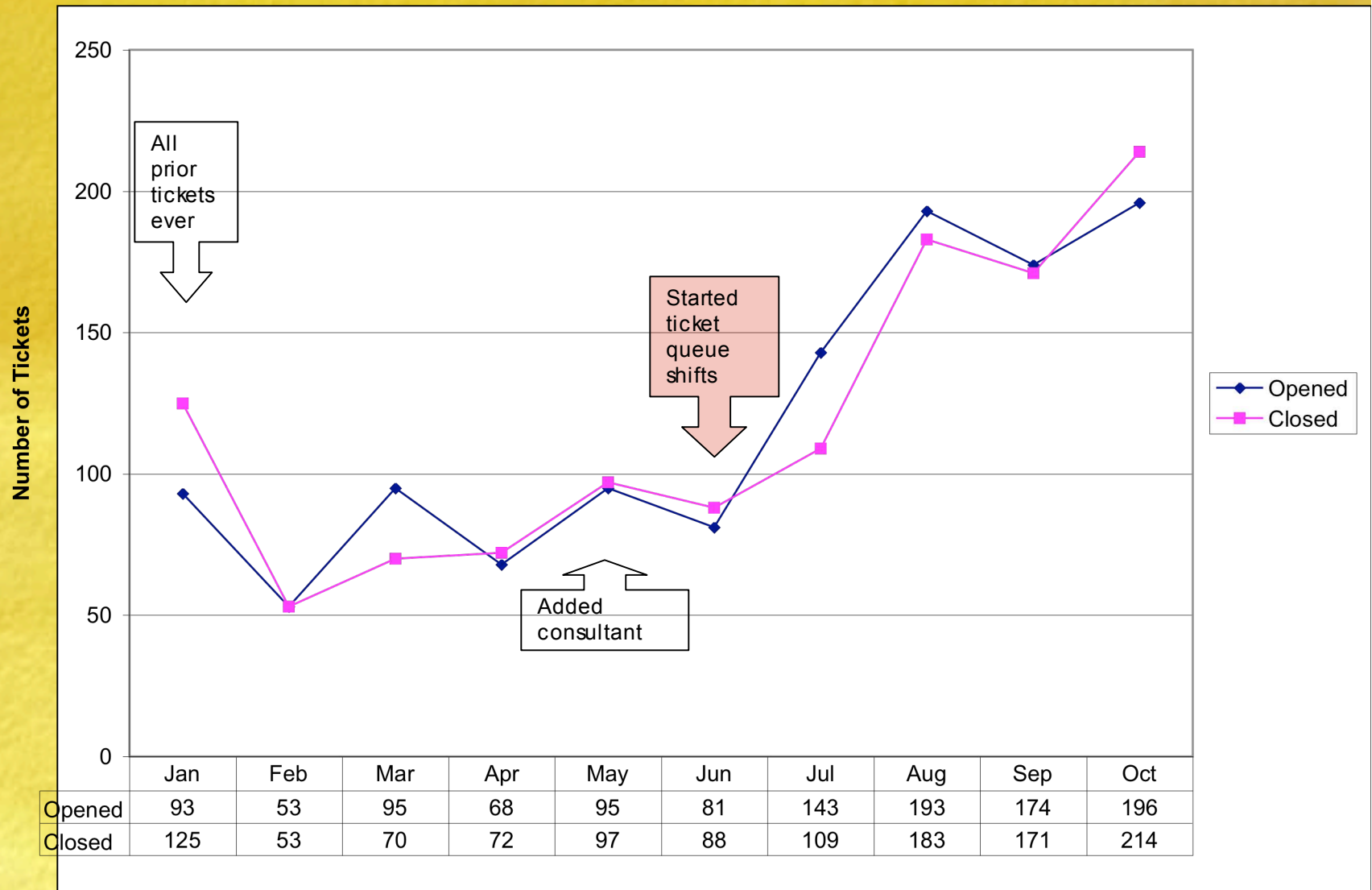To: 9/30/2005

10/3/2005 4:08:03PM

Added consultant

"Getting Real" with Tickets

- Meaningful priorities
  - When everything is 'high' or 'critical', you lose!
  - Priority fields should be user-focused
  - Create matrix of number + text field for self-prioritization
- Assign <u>due dates</u>
  - A ticket without a due date is almost worthless
- Set service level expectations
  - Automatic due dates per priority

Starting to Get Buy-In

2005 Track-It Ticket Activity

Number of Tickets

All prior tickets ever

Started ticket queue shifts

Added consultant

Opened
Closed

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Priority Guidelines

- On beyond 'multiple user affected'
  - Prioritize Sales/Customer functions
  - Prioritize Finance
  - Recurse within toplevel priorities
    - Individual, multiple, critical functions
- Include Maintenance & Security
  - Explicit priority ratings for planned maintenance, for security threats, for prevention of all kinds
- Use the 'County Fair Ribbon' numbering system
  - Multiple numerical priorities, ranking within classes

Typical Priority Examples

Critical
Outage
Top
Urgent
Severe
Medium
Low

"Who wants to be low priority?"

Meaningful Priority Examples

1: Critical: Finance / Ops

1: Critical: Security Breach

1: Critical: TapeOut

2: Critical: Customer Facing

2: Security: Remove Access

3: Maint: Prevent Outage

3: Eng: Build/Release Process

3: Work Stop: Customer Facing

4: Work Stop: Finance / Ops

4: New Hire: Provision

4: Purchase Order

5: Work Impact: Customer Facing

5: Maint: Improve Services

7: Improvement: Customer Facing
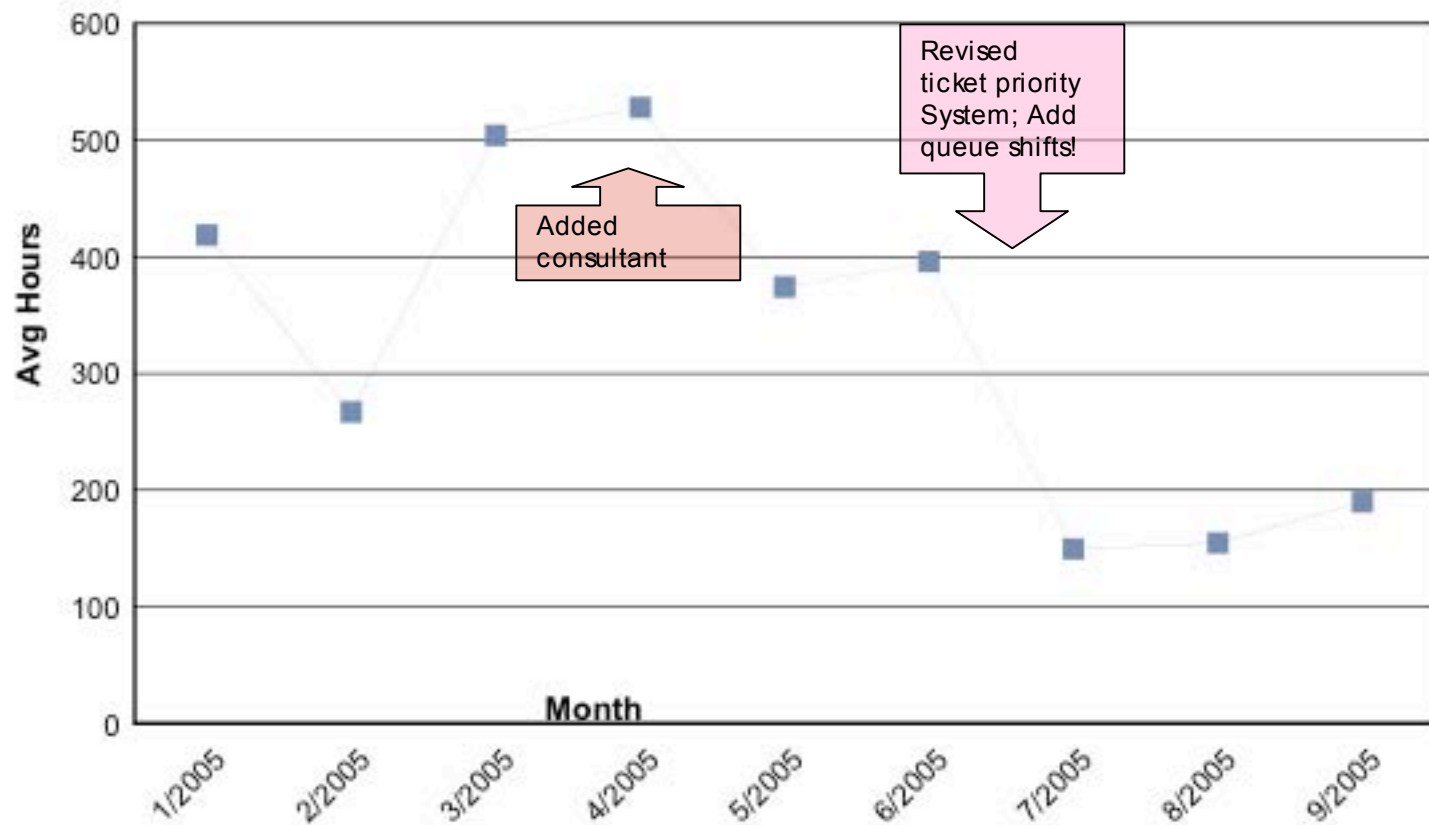
88: Monitoring: Do Not Close

99: On Hold: Tracking

Response Time Improvements

Average Time to Complete Work Orders by Month

Dates displayed in
Pacific Daylight Time

From: 1/1/2005
To: 9/30/2005

10/3/2005   4:08:03PM

Added consultant
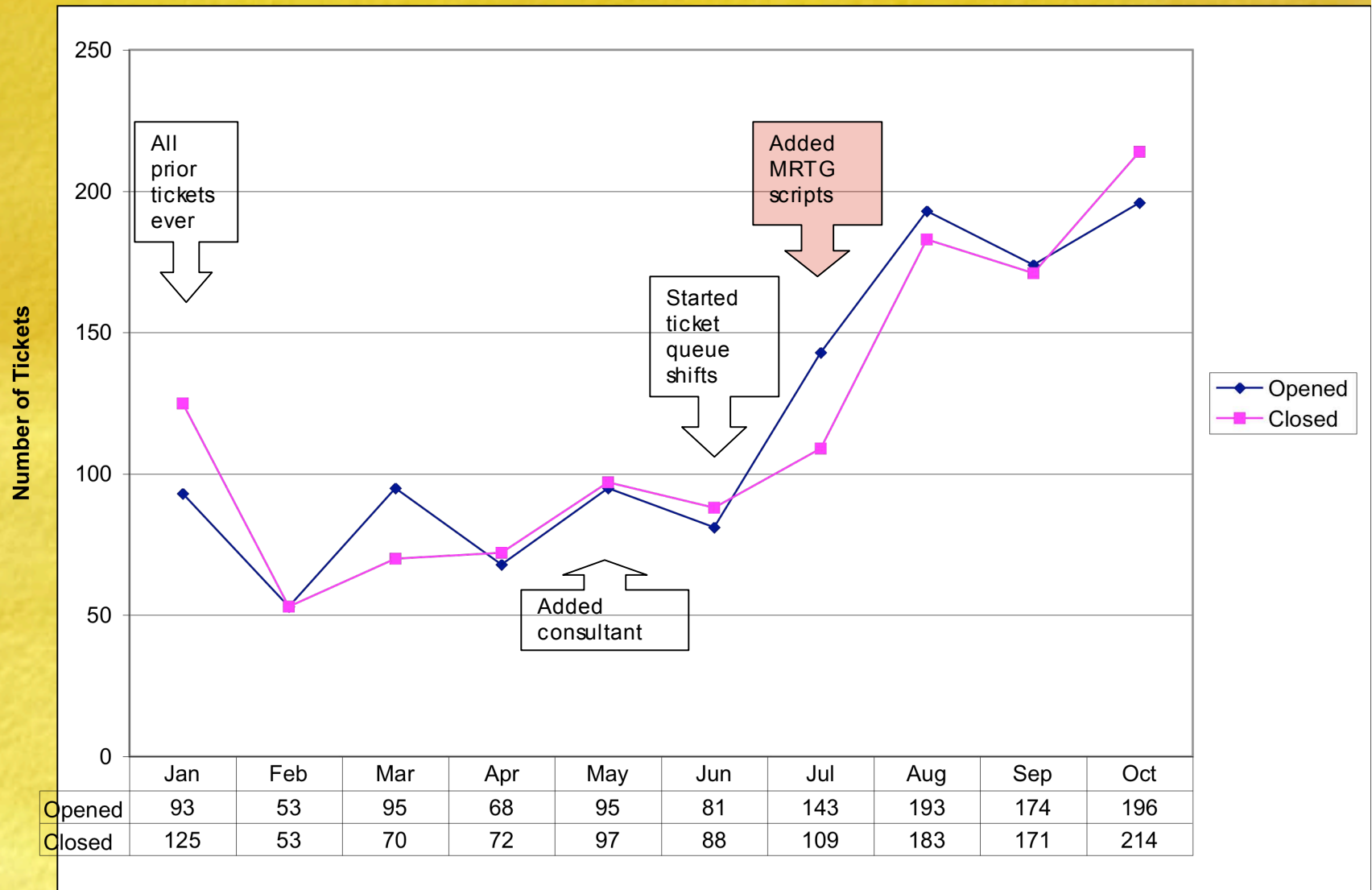
Revised ticket priority System; Add queue shifts!

Monitoring

- Establishing baselines
- Make results available
  - Self-service debugging for the power users
- Solves finger-pointing issues
- Bonus: Usually enables automated complainers to feed into your ticket system
  - This is a *great* metric to show your boss later!

Complainers: Pay Now or Later

2005 Track-It Ticket Activity

All prior tickets ever

Added MRTG scripts

Started ticket queue shifts

Added consultant

Number of Tickets

Opened
Closed

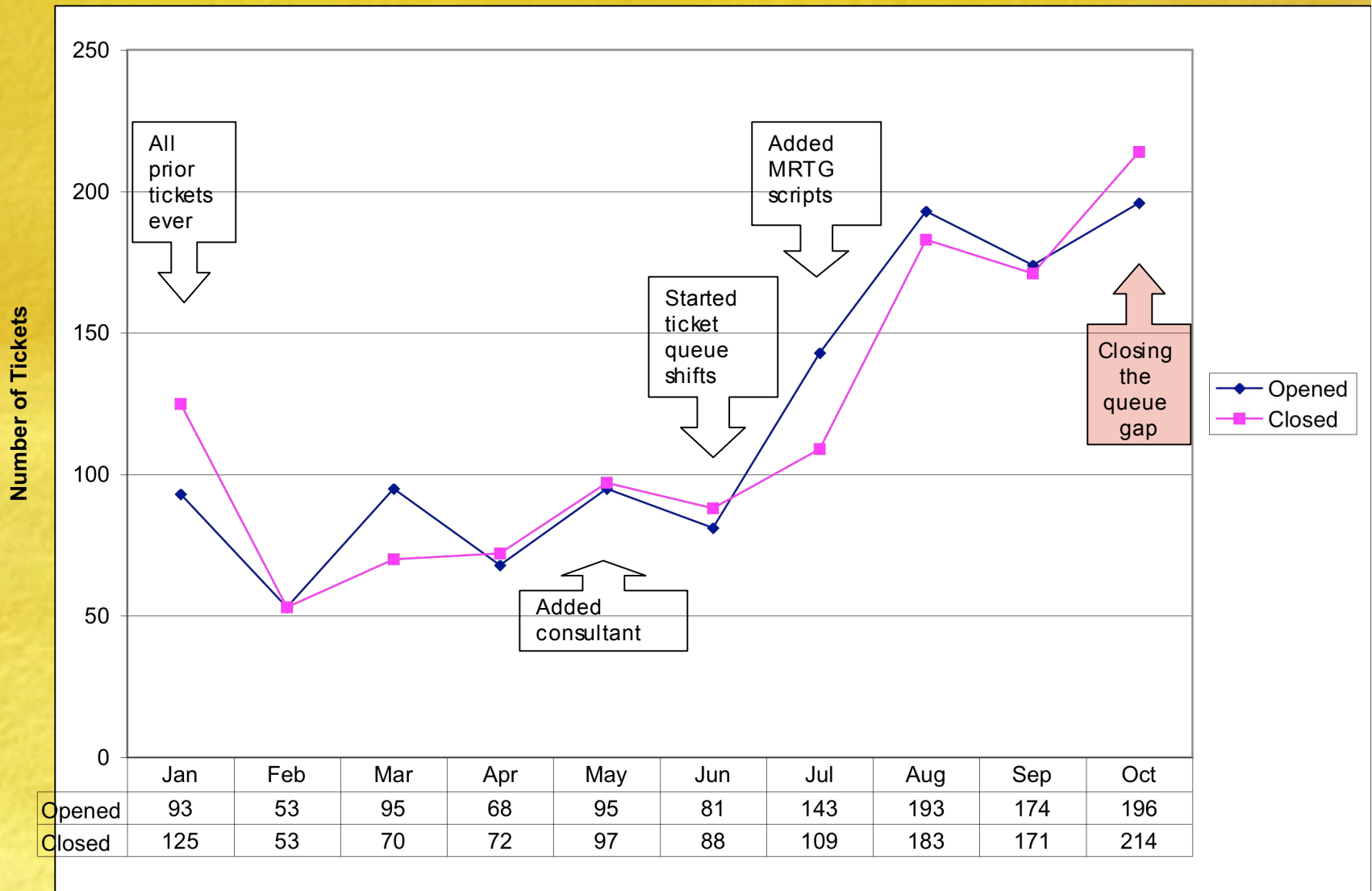|	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
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"Use the Reports, Luke"

- Documenting productivity
- Establishing the need for more staff
- Figuring out who, what, and where your 'hot buttons' are located
  - Subsystems, people, and other out of proportion sources of tickets
- Find out when things are getting BETTER

Light at the End of the Tunnel?

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Thank You!

Questions?
Comments?
Caveats?

Virtual.Net: Strategic IT for the Growing Enterprise