



CRAWL...WALK...RUN...

**IBM TRIRIGA
TERADYNE CASE STUDY**

October 2012

TERADYNE

INTRODUCTION

Realized Business Benefits

- Identified consolidation opportunities at more than 20 U.S. locations, totaling in year one a cost avoidance of USD30 million
- Provided more than USD750,000 in new revenue generation over four years
- Increased asset performance through greater preventive maintenance
- Reduced reporting times by 99 percent

“Our job is to manage people, places and things. And IBM TRIRIGA software has showed us again and again that it is fundamental to our work and helps lend credence to the facilities management professional.”

—Jennifer Wickwire



WHAT DOES TERADYNE DO?

Teradyne designs and manufacturers Automatic Test Equipment (ATE) for the semi-conductor business.

So *WHAT* does that actually mean?

We make really big equipment (called testers) that:

- Can only be shipped on 747's
- Requires lots of electricity to run (200 Amps/each)
- Requires water cooling from our HVAC plant
- Require 24x7 support
- All to "test" little tiny micro-chips that make:
 - Kids' shoes flash / Ipad / HDTV turn-on, etc.

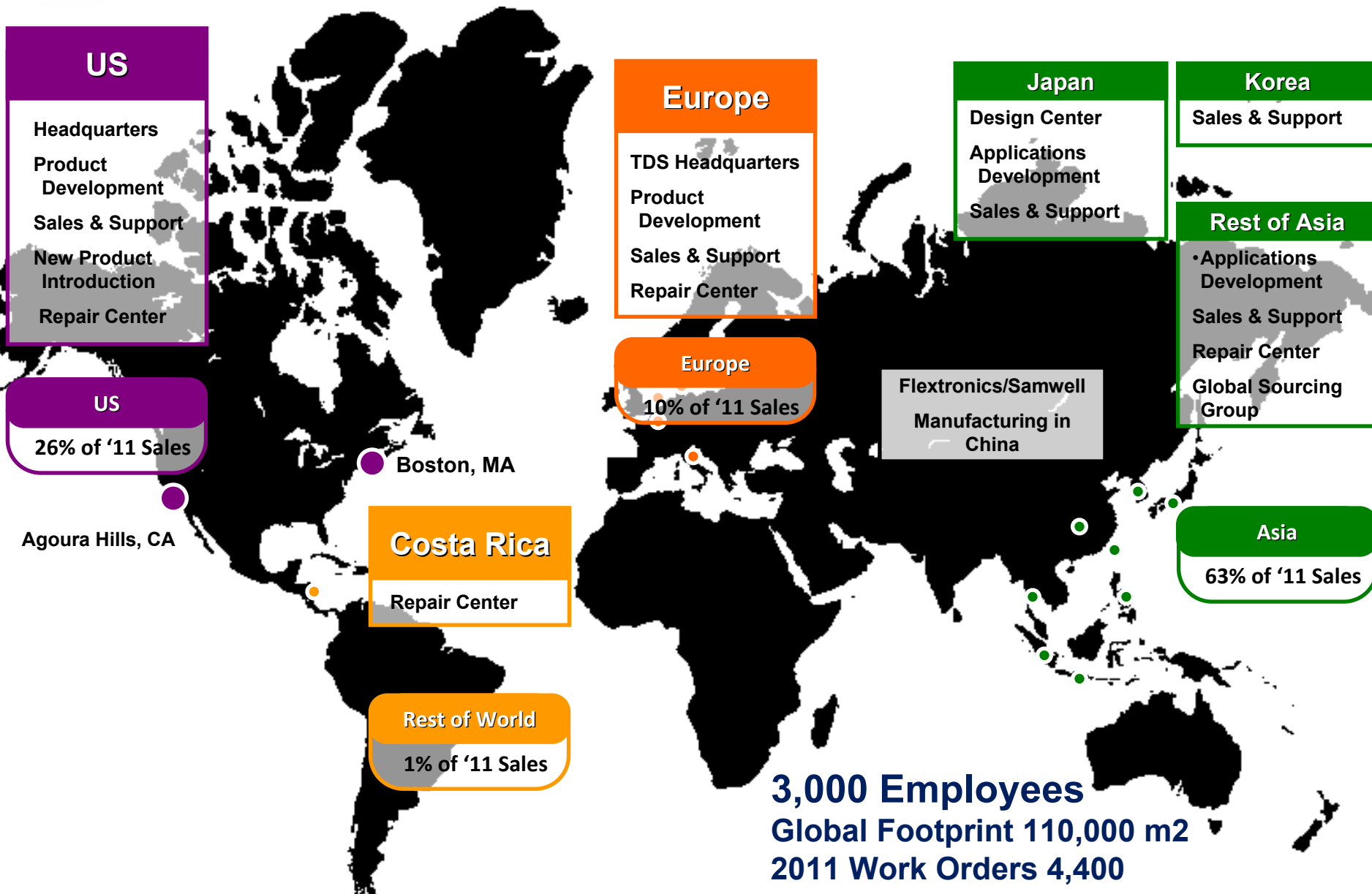
TERADYNE PRODUCTS SUPPORT...



Teradyne Named to VLSI Research "10 BEST" List for 21st Straight Year



TERADYNE GLOBAL MARKET



NATURE OF TERADYNE FACILITIES?

- Engineering Development Labs
- Manufacturing
- Clean-Rooms
- Warehouses
- Office & Support Areas
- Cafés, Gyms, Child Care Centers
- Data Centers

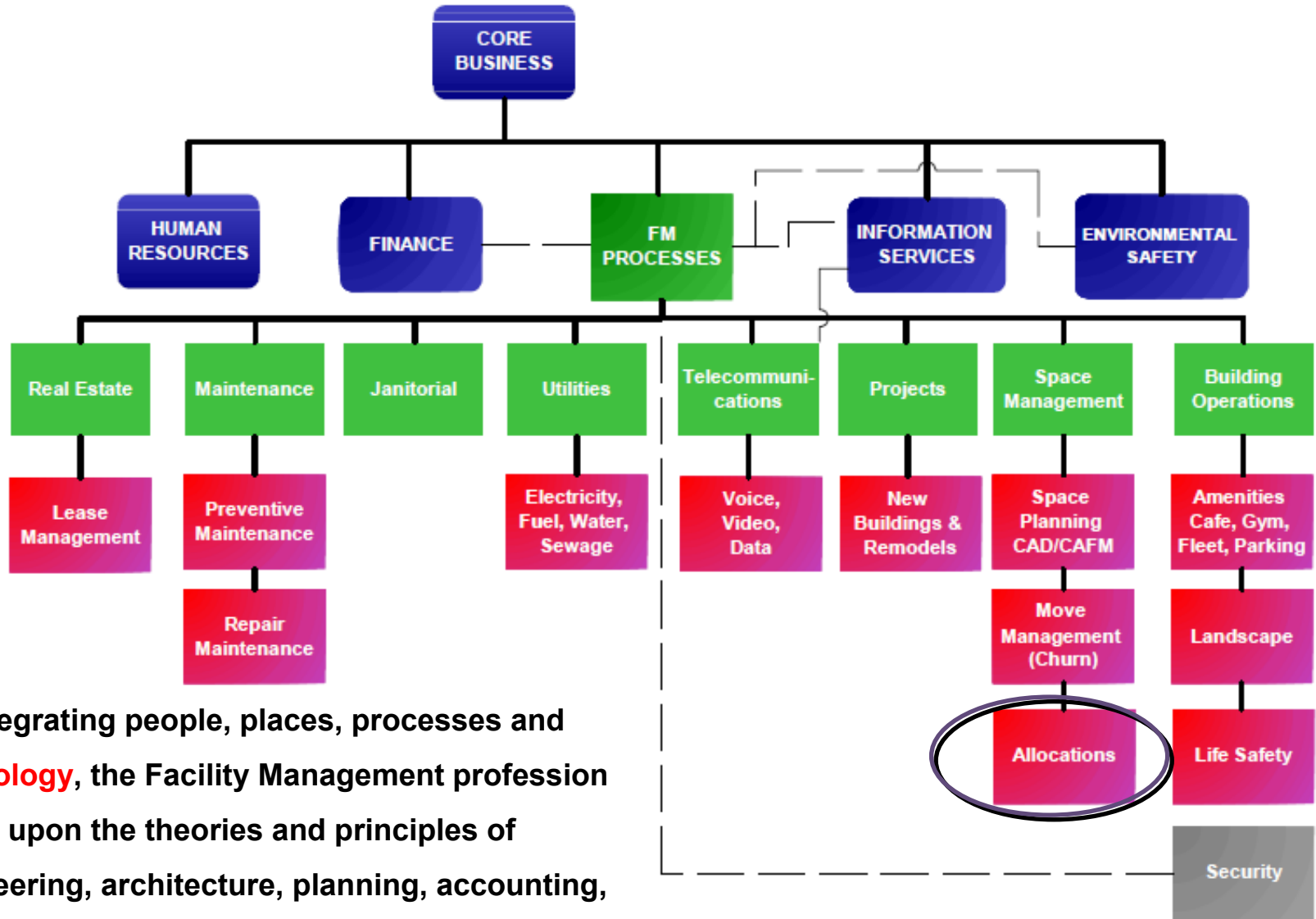
ALL

With Heavy Infrastructure Requirements

AND....

High Churn Rates Associated with Constantly Evolving Space Needs

FM UMBRELLA OF RESPONSIBILITIES



By integrating people, places, processes and **technology**, the Facility Management profession draws upon the theories and principles of engineering, architecture, planning, accounting, finance, management, and behavioral sciences.

A SEEMINGLY LIFETIME AGO....

Drawings without Data; Data without Drawings

Teradyne's facilities management department was managing and analyzing space allocations straight from CAD drawings. This process was both time intensive and prone to inaccuracy.

“There was really no accountability within our allocation process,” said Jennifer Wickwire, Facilities Manager/Architect at Teradyne. “Our CAD files didn't relate to any of our database records. There was a lot of guesswork involved.”

1999-2000: THE “*Crawling*” BEGINS . . .

“After careful review, Teradyne selected TRIRIGA’s (now **IBM TRIRIGA**) FacilityCenter. FacilityCenter offered an expansive CAD integration solution that was both powerful and easy to support.”

Additionally, FacilityCenter offered a variety of facilities management tools that, because of the modular nature of TRIRIGA’s solutions, could be added piece by piece as desired.”

Integrating Data

In March of 1999, Teradyne purchased FacilityCenter and CAD Integrator for MicroStation.

WHAT “*Crawling*” ENTAILED . . .

- Tons of Preparation...Database Setup
 - Determination of Space Classifications Standards
 - Determination of Property Code Nomenclature
 - Determination of Employee & Organizational Data
 - How to keep this data current
- Work Begins of Uploading Six Buildings
 1. Scrub CAD Files
 - File separation of generic CAD files from dB files
 - Creating “poly-line” shapes to coincide with room spaces
 2. Upload 70,000 M2 of Space
 3. Upload 2400 Employees
 4. Upload Space Chargeback Data
- Duration - 6 Months
 - Was “Mind Numbing”

AFTER “*Crawling*” WAS IT WORTH IT???

Integrating Data

Yes!!! Absolutely!!!

Each of the Four Passes Through the CADD Files YIELDED Four Benefits:

1. Overall Square Footages
 - Gross & Net Rentable Surprises
2. Space Class Analysis
 - Building Composition Revealed
3. Occupancy
 - Who’s Who in the Zoo & Where are They
4. Space Charge Back
 - $t = \$$

2003 TRIRIGA CASE STUDY...

"The advantage of TRIRIGA's CAD

Integrator in terms of space management

and allocation is clear: It takes what was a

two week exercise and boils it down to

a matter of seconds."

- Jennifer Wickwire, Facilities Manager/

Architect Teradyne



**Teradyne Uses FacilityCenter To Integrate
Data And Automate Processes**

2000 - 2001: WALKING BEGINS....

Meeting Demands

By December of 2000, Teradyne's West Coast Operation was handling over 2000 demand work orders a year. Work requests would come into the department by phone, email and in person. Trying to manage the receipt and dispatch of these work orders, without duplicating efforts or missing orders, was quite a challenge.

Because Call Center allows Teradyne to utilize and reference data already stored within their facilities database, data entry and retrieval is both faster and more accurate.

FacilityCenter Enterprise (facilityCenter)

File Edit Modules Window Help

Call Center

Work Order #: **NEW** Time Stamp: [] []

Status: Request Wd Via: Email

Wd Type: Demand Wd Definition: Location Based

Req.Recd Dt/Tm: [] []

General Assignment Material Journal Chargeback Audit Attribute Signatures

General

Name: Wayland, Wayne F. Phone: 810/877-5555

Building: B2 Building 2

Floor: F2 Room: 2C-51-40

Organization: 006431 Facilities: Agoura Hills

Building System: AIRCOM Air Compressors

Activity: COMP-AIR005 Add / Relocate / Remove Air Drop

Tag/Equip. #: []

Service Contract

Times printed: []

OK

Save

Keep/Copy

Clear

Cancel

Notes

Latest..

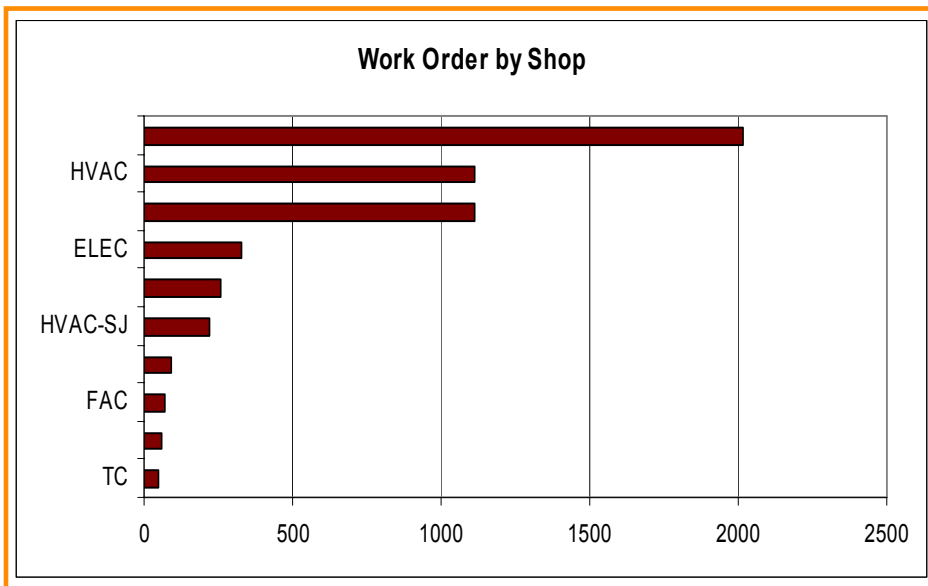
View

AutoPrint

Timesheet

SELLING WALKING INTERNALLY...

- Reduced duplicated efforts
- WO turn around time decreased
- WO's/employee increased
- Supports maintaining staffing level through business cycles
- Determines assignment of WOs between shops



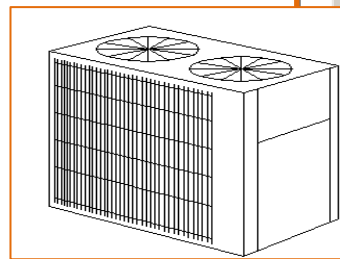
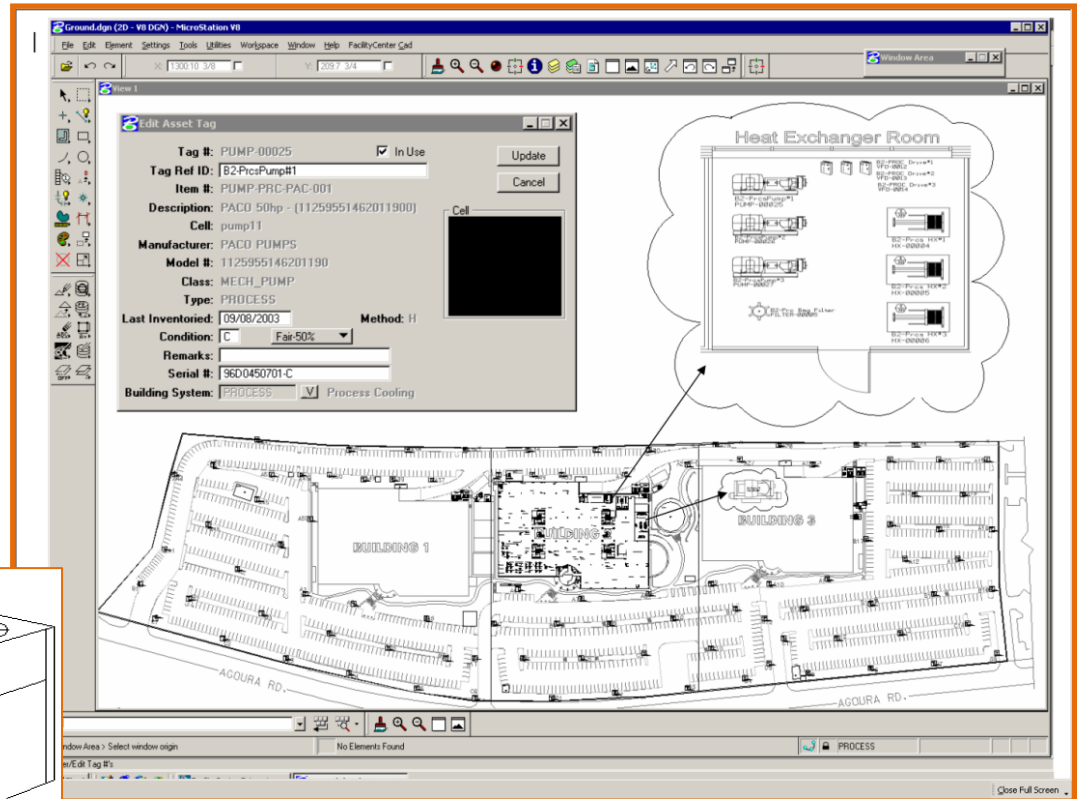
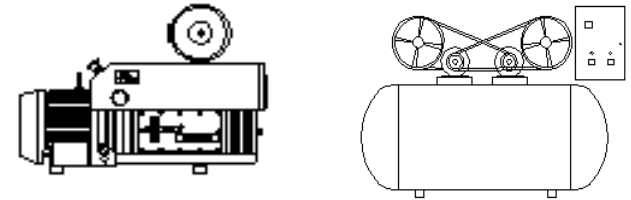
Date Range From 5/1/2004-6/30/2005

Shop Code	Shop Description	Count
TC	Telecommunications	48
JANIT-SJ	Janitorial - San Jose	58
FAC	Facilities	71
ELEC-SJ	Electrical - San Jose	92
HVAC-SJ	HVAC - San Jose	219
JANIT	Janitorial	259
ELEC	Electrical	329
MAINT-SJ	Maintenance - San Jose	1113
HVAC	HVAC	1114
MAINT	General Maintenance	2018
Total Work Order		5321

2003: RUNNING ACCORDING TO PLAN

ASSET MANAGEMENT

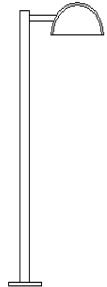
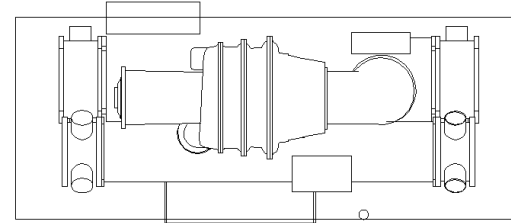
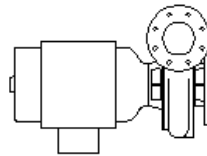
- Assets Classified & Defined in Database
 - Types, Features, Options
 - Acquisition Data, Service Location, Warranty
- Effectively Manage Assets
- Assets Displayed Graphically



2004: RUNNING...AS SCHEDULED

PLANNED MAINTENANCE

- Effectively Schedule PM's & Services
- Frequency, Procedure, Tools, Materials, etc.
- Repairs & Maintenance Tracked
- Equipment Performance Monitored
- Automatic Generation of Work Orders
- Support Life Cycle of Asset
- Supports Capital Planning & Spend Projections



The screenshot displays the FacilityCenter Enterprise software interface. The main window is titled "Asset/Equipment Tags" and contains the following fields:

- Tag/Equip #: CLG_TWR-01
- Tag Reference ID: B1-C.Tower#1
- Item #: CTWR-OPN-BAC-01
- Description: Cooling Tower - BAC - VT1-400
- Year #: [blank]
- Model #: VT1-400-QW
- Manufacturer: BALTIMORE AIR COIL (BAC)
- Class: MECH_COOLING_TWR
- Type: OPEN_TOWER
- Last Inventoried: 8/25/2003
- Method: [blank]
- Condition: B Good-75%
- Remarks: [blank]
- Serial #: serial#
- Building: ASSETS_AH
- Room: 01-81-56
- Building System: CHLR_FLT
- Regulated: [checkbox]
- Reason For Change: [checkbox]

Buttons on the right include: OK, Save, Clear, Cancel, Options..., Asm., Acct., History, Tasks..., Attributes, Readings, Alarms..., Audit, and Signature.

Below the main window is a "Maintenance History Report" window showing a table of maintenance events:


Item #	Description	Class Code	Class Type	Manufacturer Name	Model #	Serial #
CLG_TWR-01	CTWR-OPN-BAC-01	MECH_COOLING_TA	OPEN_TOWER	BAC	VT1-400-QW	serial#
	Cooling Tower - BAC - VT1-400			BALTIMORE AIR COIL (BAC)		

Below the table is a summary section:

Complete	W/O #	Date	Description	Building	Room	Building System	Cost
		10/10/2003	2003001507	ASSETS_AH	01-81-56	CHLR_FLT	\$231.80
			Water cooling tower - Semi Annual PM	Assets / Equipment	B1 C.Tower Pad	Chiller Plant	
							Total Work Order Cost: \$231.80

Buttons at the bottom include: Cancel.

Multiple Site Integration Challenge

- 
- An image of an iceberg floating in the ocean. The tip of the iceberg is visible above the water surface, while the much larger, submerged part is visible below the surface, illustrating the concept of 'the rest of the iceberg'.
- ◀ The rest of the iceberg
 - ◀ The logistics of getting:
 - Diverse
 - Multinational
 - Variable
 - ◀ Data into one reliable, efficient and easily accessible system...

2004-2005: EXPLORING THE WORLD

Terminal Server – Data and “data transfer” remains local

- Maintained a singular data source
- Allowed multiple simultaneous user sessions



Beta-Tested Silicon Valley Facility (Nov 2004)

- Management of local facilities team
 - Space Management
 - Demand Maintenance
 - Asset Management
 - Planned Maintenance

2005: RUNNING...VIRTUALLY

Facilities Maintenance Request Form

California FACILITIES

If this is a Facility-related urgent request, please call our Hotline @ ext 7070

View a Work Order Status

Update a Work Order

Submit an Office Relocation Request

Open, View and Print Floor Plans

Site Information Team

Agoura Hills Facility

San Jose Facility

View/Modify Exception List

Requesting for (if different from above):

First Name: [] Last Name: [] [Lookup](#)

Phone: []

<input type="radio"/> Adjust Thermostat (Hot/Cold Call)	<input type="radio"/> Key Request for Office
<input type="radio"/> Toilet Overflowing	<input type="radio"/> Trash Removal
<input type="radio"/> Clogged Plumbing Fixture	<input type="radio"/> General Cleaning Request
<input type="radio"/> Add/Replace Light Bulb	<input type="radio"/> In-house Ants/Pest Extermination
<input type="radio"/> Electrical Repair/Troubleshoot	<input type="radio"/> Other
<input type="radio"/> Box Request	

[Office Move/New Hire](#) [Room Setup](#)

Need by: 07/20/2006 [cal](#)

Location of problem/issue:

City: Agoura Hills Building: Building 2 Floor: 2nd Floor

Description of problem(no more than 240 characters):



Call Center

Work Order #: NEW Time Stamp: [] []

Status: Request W/O Via: []

W/O Type: Demand W/O Definition: Location Based

Req Recd Dt/Tm: [] []

General Assignment Material Journal Chargeback Audit Attribute Signatures

General

Name: [] Phone: []

Building: []

Floor: [] Room: []

Organization: []

System: []

City: []

Equip. #: []

Warranty: Service Contract:

Due Within: []

Severity: []

W/O Type: []

Date Required: [] Times printed: []

Job Description: []

Project Code: []

OK

Save

Keep/Copy

Clear

Cancel

Notes

Latest..

View

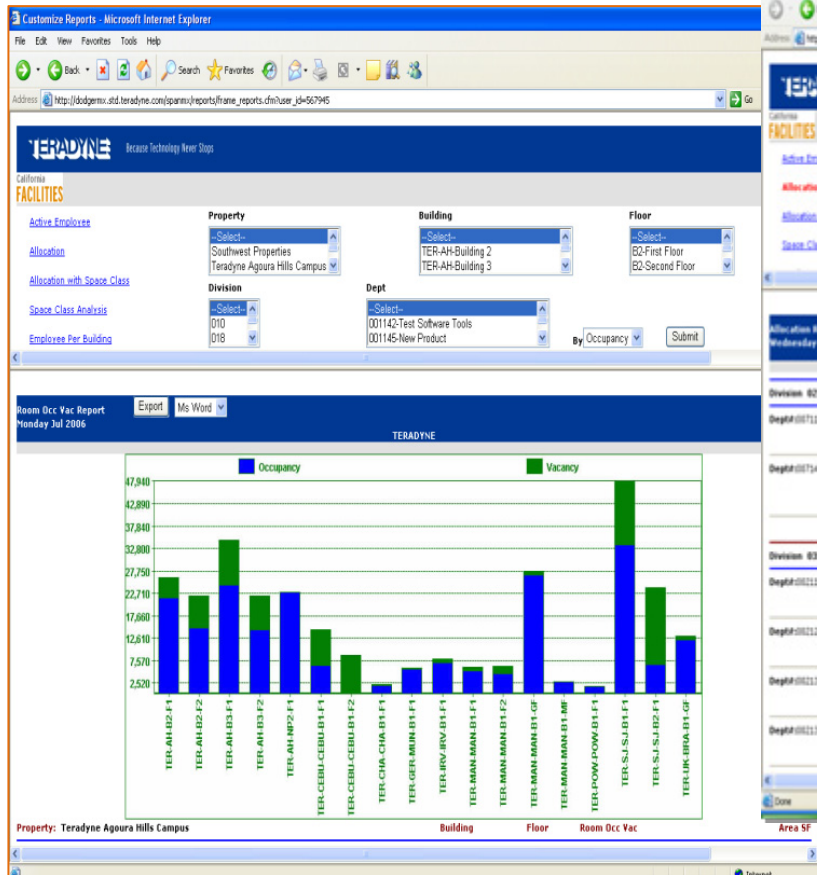
AutoPrint

Timesheet

WORK ORDER REQUESTS THRU THE WEB

- Reduced time spent to enter work orders into Call Center.
- Automatically sends email to requestor regarding status

2005: RUNNING...VIRTUAL REPORTS



Occupancy vs. Vacancy

Allocation Report for "TER-AM"
Wednesday Jul 2006

Division	Location	Area Total(SF)	Budget
Division: 025			
Dept#007117	Semi Admin	92	
	007117 Dept. Totals:	585.25 (NF)	\$3,839.93
Dept#007142	Personnel	92	
	007142 Dept. Totals:	1,371.48 (NF)	\$18,423.27
025 Division Totals:		1,876.73	\$14,263.20
Division: 035			
Dept#002119	Jaguar Interface Support	92	
	002119 Dept. Totals:	707.36	\$5,375.90
Dept#002120	Reliability	92	
	002120 Dept. Totals:	282.10 (NF)	\$1,335.97
Dept#002137	Product Requirements	92	
	002137 Dept. Totals:	404.20	\$3,071.92
Dept#002139	Customer Support	92	
	002139 Dept. Totals:	101.05	\$ 747.99

Allocation Report

2006: FLYING... TO TURN A PROFIT

Maintenance Services Proposal
Farmers Group, Inc.
31051 Agoura Road, Westlake Village, CA

March 24, 2006

Paul Hobbs
Farmers
31051 Agoura Road
Westlake Village, CA 91361

Dear Paul,

Good seeing you again this week. Enclosed for your review is a proposal for maintenance services of your office building at Westlake Hills.

The proposal includes all the maintenance services that we have provided for your facility in the past. We have included a summary of our services for your review.

Though this contract offer is on a month-to-month basis, we have a long relationship with Farmers and know this will be a long-term relationship. We are providing the top-level service you have come to expect from our relationship through the real estate transactions. We take our work seriously and know our success is your satisfaction.

If you would like to start service, please sign and return the initial Proposed Scope of Work. Please include a complete contact information to us at 818-733-1111. If you have any questions, please contact me to set up a walk-through of the facility on the date of service commencement.

Teradyne Facilities appreciates the opportunity to work with you.

Regards,

Jennifer M. Wickwire, AIA
Facilities Manager/Architect
Teradyne, Inc.
818.874.6117 Office
818.874.6127 Cell

Maintenance Services Proposal
Farmers Group, Inc.
31051 Agoura Road, Westlake Village, CA

30701 Agoura Road, Agoura Hills, CA 91301 | p: 818.991.2900



Service Level Agreement

This Agreement is made and entered into on the date last hereinafter set forth:

Farmers Group, Inc. 31051 Agoura Rd. Westlake
(Company Name) (Address) (City, State)

(Hereinafter referred to as "Customer" and Teradyne Inc., Inc. hereinafter referred to as "Service Provider").

It is hereby mutually understood, and agreed by the parties as follows:

1. HIRING OF MAINTENANCE SERVICE PROVIDER: The Customer hereby hires the Maintenance Service Provider to provide the Services for the property as described in the Proposed Scope of Work.

2. SCOPE OF SERVICES: The Maintenance Service Provider will provide all labor, materials, equipment and supplies necessary to perform such Services. The Maintenance Service Provider warrants that all services performed under this Agreement shall be performed in a professional and workmanlike manner. The Maintenance Service Provider shall be responsible for taking all necessary steps with respect to the performance of the Services required pursuant to the Proposed Scope of Work. The Customer shall be responsible for providing access to the property and any necessary permits.

3. COMPENSATION: The Customer shall pay the Maintenance Service Provider a quarterly fee for the Services performed under this Agreement. The fee shall be \$5,000 per quarter (12 months) or a prorated amount if the scope of services is increased or decreased beyond that stated in the Proposed Scope of Work. At which time a revised increase or decrease of services is considered, an equitable pricing shall be rendered to Farmers Group, Inc. for their consideration.

5. PAYMENT: Invoices will be sent to the Customer on a quarterly basis for all services performed on an as needed basis for any requested special services. Invoices shall be due within 15 days of the end of each quarter, with a 6-week arrears and 6-week projection for agreed services. The Customer shall pay all invoices on a Net 30 basis from the invoice date. Should services be terminated, the Customer shall offer a pro-rated refund for services paid, but not yet rendered.

6. TERMINATION: This agreement may be terminated by either the Maintenance Service Provider or the Customer for any reason by giving thirty (30) days written notice to the other party. In the event of such termination, the Customer shall pay the Maintenance Service Provider all monies otherwise due hereunder to date of termination. Should, in the event of termination, the Customer default to provide services during this (30) day window, Farmers Group, Inc. will not be responsible for those services not given.

7. NONSOLICITATION: Both the Customer and Maintenance Service Provider agree that the conscripts of this contractual relationship and for a period of 15 months the Customer nor the Maintenance Service Provider shall not hire, attempt to hire, or solicit any personnel working for the other.

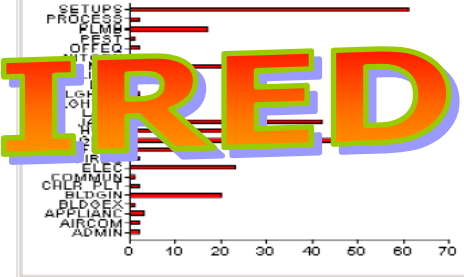
8. COLLECTION COSTS: The Customer agrees to pay all collection costs and any attorney's fees incurred by the Maintenance Service Provider to enforce the terms of this Agreement.

Maintenance Services Proposal
Farmers Group, Inc.
31051 Agoura Road, Westlake Village, CA

30701 Agoura Road, Agoura Hills, CA 91301 | p: 818.991.2900



WO by Building System



Data range from 10/1/2005 to 12/31/2005

Building System Code	Building System Description	WO Count	JAN1	FEB1	MAR1	APR1	MAY1	JUN1	JUL1	AUG1	SEP1	OCT1	NOV1	DEC1
LAND	Landscaping	1												
LIGHTEX	Lighting - Exterior	1												
LIGHTIN	Lighting - Interior	2												
LIFE	Life Safety	1												
LIFTS	Elevators/Escalators	2												
MAC	Move Aids/Change Activities	26												
NITROGEN	Nitrogen System	3												
OFFEQ	Office Equipment	2												
PEST	Pest	1												
PUMP	Pumping	17												
PROCESS	Process Cooling	2												
SETUPS	Setups	61												

Work Orders printed: 388

Work Order by Building System



2006-2011: RUNNING...THE WORLD

2006-2007 Supported:

- All Five California Locations
- Shanghai, China
- Cebu, Philippines
- Manchester, UK
- Bracknell, UK
- Cebu, Philippines
- Munich, Germany
- Paris, France



Then in 2008, Facilities Centralizes into Corporate

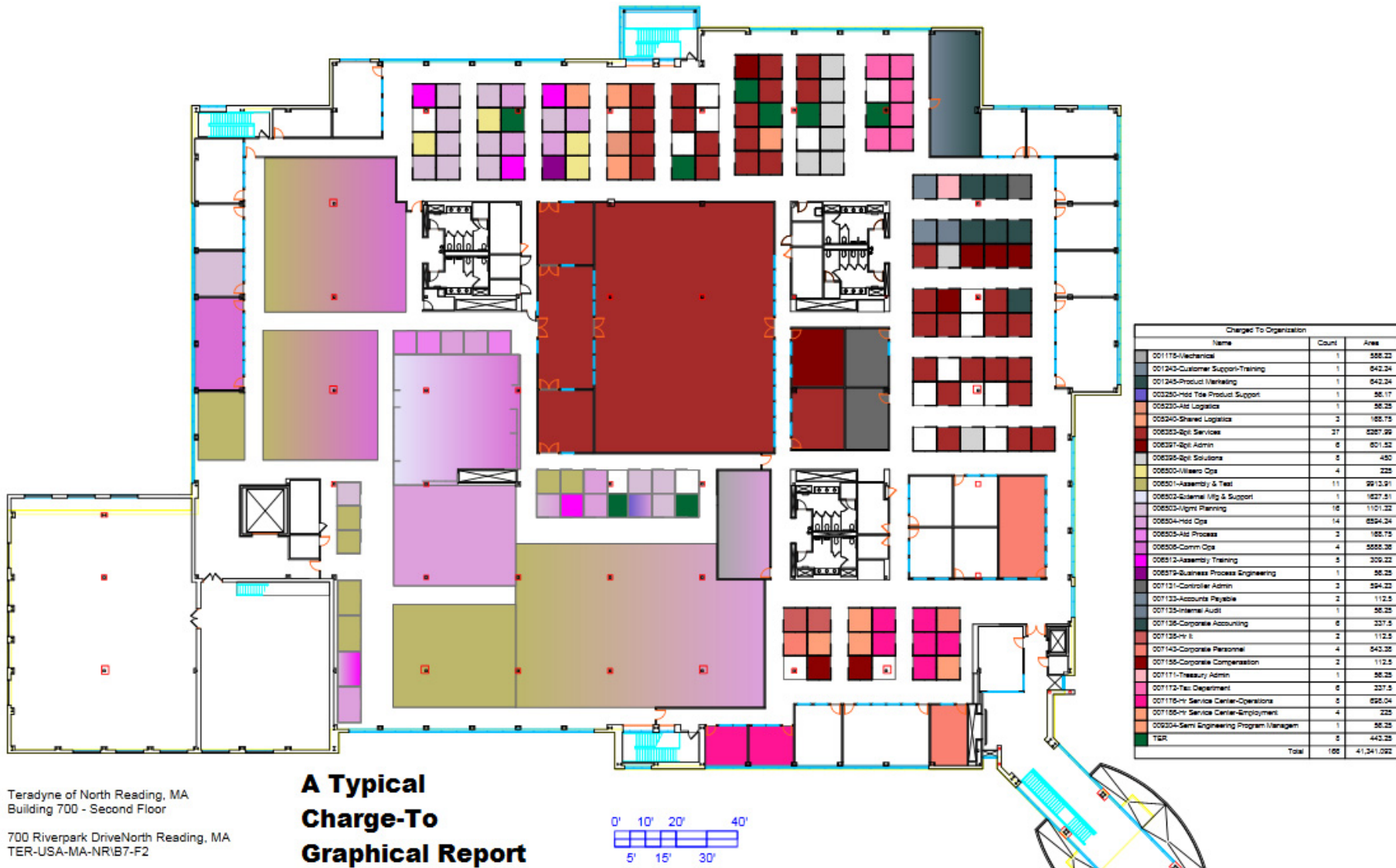
- Balance of CRE Portfolio integrated....
- Direct Management of all US locations
 - Including Corporate Headquarters
- Jennifer's nemesis retires ignominiously...

2011- PRESENT: IBM TRIRIGA T-10

- Facilities Team attends last ever Tririga Conference in Las Vegas Oct 2011
- Team decides newest T-10 release offers greater functionality over our existing platform
- Key decision points:
 - Web-based application vs. client-server
 - Puts good graphical information in the hands of “Everyone”
 - “Everyone” can help keep information current & accurate
 - Lease Management Module
 - Can tie directly into our ERP – Oracle Enterprise
 - Sustainability Metrics – with TREES
 - Captures energy usage in one dB repository tied to CRE portfolio



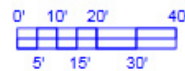
WEB BASED REPORTS – WORTH IT!!!



Teradyne of North Reading, MA
Building 700 - Second Floor

700 Riverpark Drive North Reading, MA
TER-USA-MA-NR1B7-F2

**A Typical
Charge-To
Graphical Report**



GETTING MORE WITH LESS

Space Composition Reports

- Vital to Understanding Current Building Composition
 - What percentage of space is devoted to conference rooms, offices, labs, etc.?

Space Occupancy & Charge-To Reports

- Vital to Understanding Space Utilization
 - What percentage of usable space is utilized?
 - What are we currently paying for our facility?
 - What is the cost of vacancy?
 - Where are there consolidation opportunities?
 - Do we need to expand? And how?

“We can see how people use the space and then match that with innovative layouts to accommodate our employees within a smaller footprint.”

— Jennifer Wickwire, Facilities Manager and Corporate Architect, Teradyne Corporation

2012 IBM TRIRIGA Case Study Quote

2012: Irvine Office Case Study

“We needed to look at current-thinking options like ‘hoteling’ and ‘collaboration spaces’; modern concepts that optimize space utilization while still meeting the evolving needs of our employees and their space requirements.”

—Rich Lupien, Director, Corporate Real Estate,
Teradyne Corporation

Sales Team Demand More Space!

Our Choices:

- Lease An Additional Suite
 - Rough Cost ~\$185K/Year

OR

Look at Alternate Workplace Strategies

- Increase the capacity by one employee for every workstation to 1.5 employees for every workstation.
 - 14 persons to 22 persons
 - Rough Cost ~ \$35k/1 Time

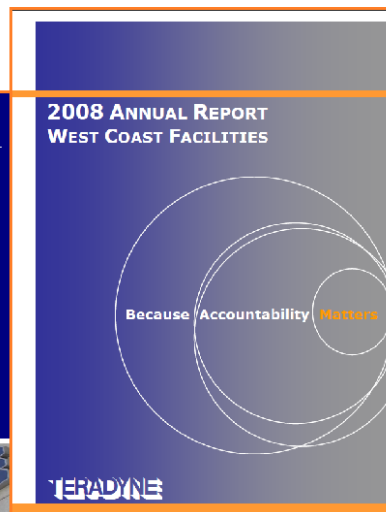
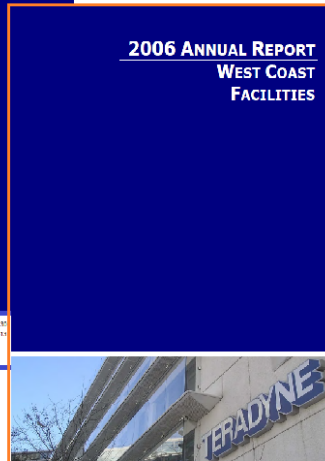
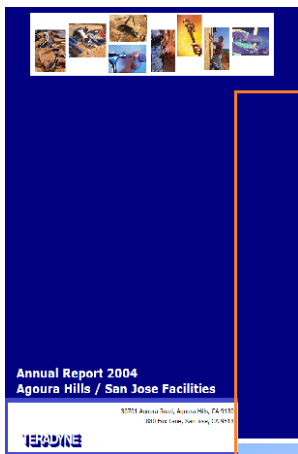
October 2012: Irvine Office Case Study

...To This



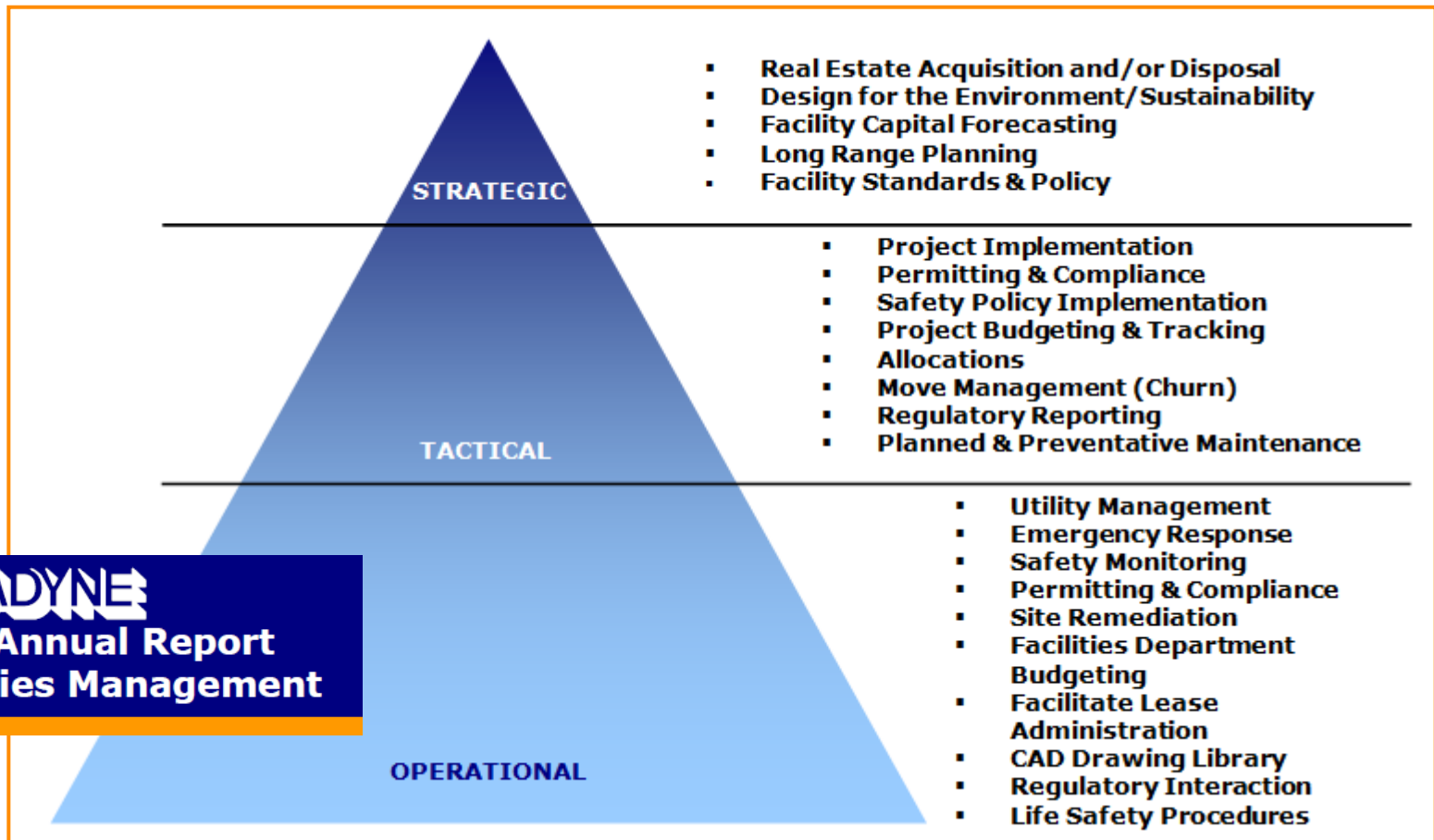
THE GOAL OF EVERY FACILITIES MANAGER?

- A1. To be as invisible as possible?
- A2. To be as invisible as possible except when a problem arises, then play the role of hero?
- A3. To be as unobtrusive as possible, but also to illustrate the work, the effort, we do in favorable light?
 - Hint: If your answer is A3, create an FM Annual Report...



2009: OUR FM MISSION STATEMENT...

It is the mission of the Corporate Facilities Team to provide flexible and functional facilities which align with strategic goals of Teradyne by integrating people, work processes, and workplaces into a coherent and productive system.



TERADYNE
2009 Annual Report
Facilities Management

2010: ILLUSTRATING SYNERGISTIC GOALS...

2010 Facilities Management Team Goals

Goal 1) Improve Financial Performance

- Reduce costs/consumption + increase efficiency
- Baseline costs + usage/consumption
- Define projects (capital + operating) to:
 - ✓ reduce energy usage/consumption by 5%
 - ✓ reduce associated costs of 10%

Goal 4) Improve Operational Continuity

- Implement asset management + planned maintenance to reduce critical equipment failure/malfunction to less than 2%
- Develop out-of-course event action plan
- Vendor management - review service agreements vs. system failures with response times and corrective actions

Goal 3) Customer Service

- Improve Customer Service as measured by annual VOC survey
- Standardize and Publish Service Level Agreement
- Streamline work-order turn around
- Develop Audit Material for Custodial, Landscaping and Cafeteria Services

Goal 2) Optimize Asset Utilization

- Target Increase of Space Utilization rate across CRE portfolio to better than 85%
 - ✓ Complete North Reading Consolidation
 - ✓ Complete Woburn Consolidation
 - ✓ Complete Agoura Hills Consolidation
- Deploy/enforce space use standards
 - ✓ hotel and office standards

TERADYNE

2010 FM Annual Report

2011:SUPPORTING SHAREHOLDER VALUE



2012: "TRIPLE BOTTOM LINE" GOALS

TERADYNE FM Goals 2012

<p>1. People: Illustrate our commitment to providing safe, flexible facilities that meet the needs of our internal stakeholders.</p>	<p>2. Planet: Reflect our commitment to responsible, sustainable environmental stewardship.</p>	<p>3. Profit: Target our commitment to sustainable business practices as every dollar saved by our efforts goes directly to Teradyne's bottom line.</p>
<p>Support our Employees by Improving How Work Gets Done</p>	<p>Develop, Administer and Maintain Companywide Policies and Goals on Sustainability Matters</p>	<p>Leverage Purchasing Power by Negotiating National Service Agreements</p>
<ul style="list-style-type: none"> Streamline Work Order Requests with Tririga T-10 Online Solution 	<ul style="list-style-type: none"> Reduce Consumption of Electricity, Gas and Water 2% - 3% Over 2011 Aggregate 	<ul style="list-style-type: none"> Qualify for Utility Rebates for Implementation of Energy Conservation Initiatives
<ul style="list-style-type: none"> Streamline Work Order Move Requests with Tririga T-10 Online Solution 	<ul style="list-style-type: none"> Explore Solar Opportunities / Lighting Controls / Variable Frequency Drives - Implement Opportunities where appropriate 	<ul style="list-style-type: none"> Investigate Feasibility of Utility Rate Agreements for Energy Consumption
<ul style="list-style-type: none"> Provide Reporting Tools with Tririga T-10 Online Solution 	<ul style="list-style-type: none"> Identify and Share Practices (Conduct Energy Audits / Investigate Agency Programs: Energy Star, Labs21, LEED) 	<p>Optimize Asset Utilization Across Teradyne Real Estate Portfolio</p>
<ul style="list-style-type: none"> Champion Sustainability among Employees 	<ul style="list-style-type: none"> Explore Tririga T-10 Database Ability to Track Energy Usage to Teradyne Real Estate Portfolio 	<ul style="list-style-type: none"> Support Site Consolidation Opportunities
<p>Reinforce Teradyne Culture/Brand</p>	<ul style="list-style-type: none"> Support Site Expansion Requirements 	
<ul style="list-style-type: none"> Site Improvement Projects 		
<ul style="list-style-type: none"> Conference Rooms Upgrades 		
<ul style="list-style-type: none"> Explore Current Trends in Workplace Strategy and Collaboration Technologies Solutions 		
<p>Advance Planning for Disaster Preparation and Recovery</p>		



OUT OF THE BOILER ROOM INTO...



IN SUMMATION...

TERADYNE Business Benefits

- Identified consolidation opportunities at more than 20 U.S. locations, totaling in year one a cost avoidance of USD30 million
- Provided more than USD750,000 in new revenue generation over four years
- Increased asset performance through greater preventive maintenance
- Reduced reporting times by 99 percent

“Our job is to manage people, places and things. And IBM TRIRIGA software has showed us again and again that it is fundamental to our work and helps lend credence to the facilities management professional.”



 Let's build a smarter planet

IBM

TERADYNE

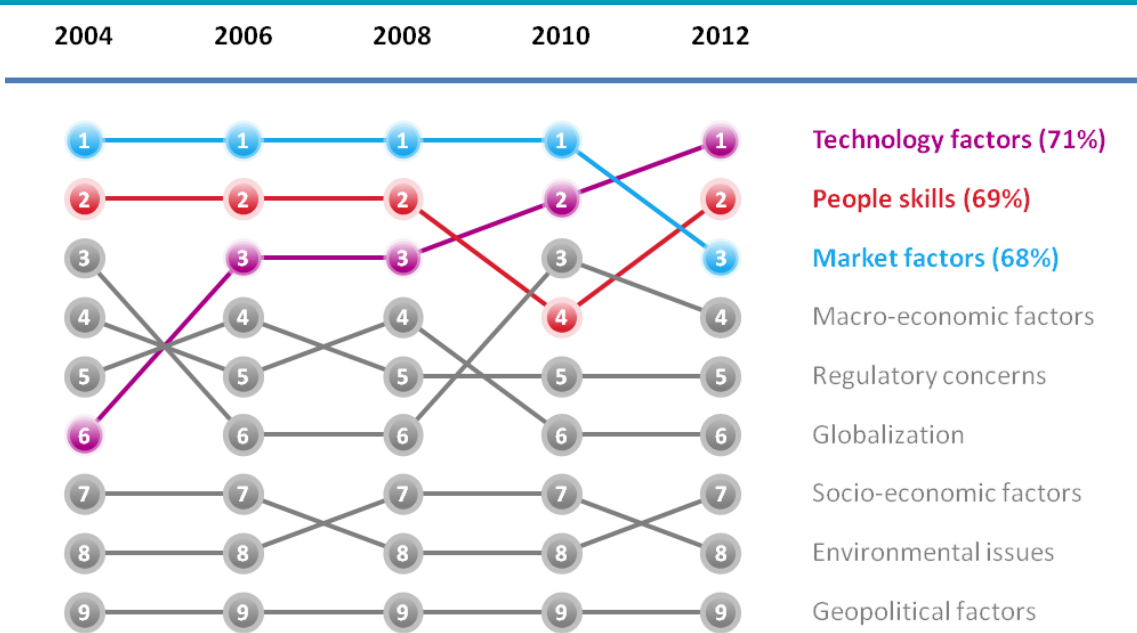


John Clark – Worldwide Manager, Smarter Infrastructure

IBM TRIRIGA: An IBM Smarter Buildings Solution



In this new world everything is changing



CEO's identify technology factors as the greatest external factor influencing organizations



INSTRUMENTED



INTERCONNECTED



INTELLIGENT

Smarter Buildings technology generates significant returns

40% less energy

Energy usage reduced by up to 40% and maintenance costs by up to 30%.

85% higher occupancy

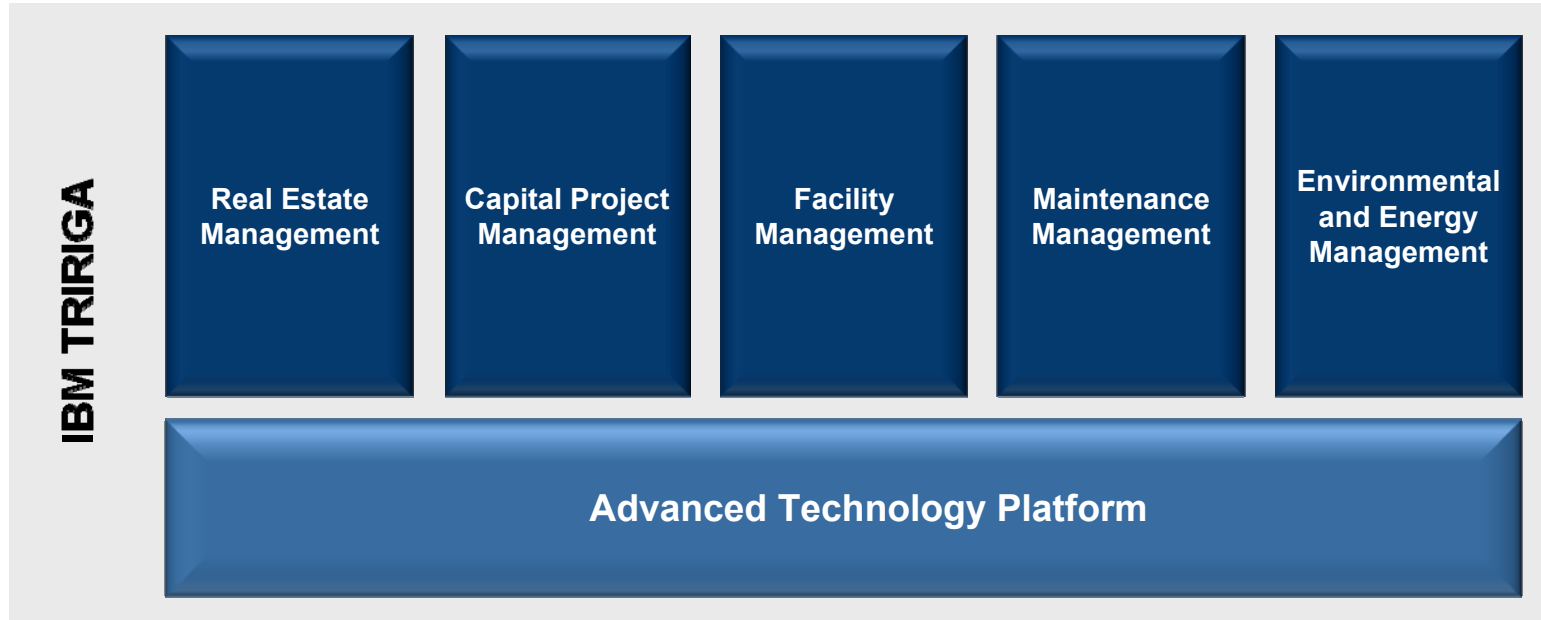
Facility utilisation increased by up to 85% with 210% higher annual savings in Total Cost of Occupancy.

75% lower work order costs

Cost of a single work order reduced up to 88% — a savings of 62% from the industry average.



Implement IBM TRIRIGA to consolidate facilities systems



- Enterprise-class applications to streamline real estate and facilities management
- Pre-built performance metrics to identify inefficient facilities, processes and resources
- An advanced technology platform to extend applications without changes to source code
- Available in 16 languages to increase staff productivity worldwide

Real estate management

Build more effectiveness into real estate operations



“IBM has been among the earliest to focus on and develop functionality for the impending FASB/IASB accounting change that will probably eliminate the operating lease.” – Rob Schafer, Research Director, Gartner

Main Features:

- Site selection analytics with project-specific weighting of financial and non-financial criteria
- Real estate payment reconciliation processes and controls
- Lease accounting financial analysis and audit controls

Benefits:

- Generates higher return real estate transactions that balance financial and non-financial needs
- Identifies landlord overcharges to reduce occupancy and operating costs
- Accelerates compliance with the new global lease accounting standard

Results:

- **IBM TRIRIGA alerted a major European manufacturer to an automated lease renewal and saved EUR2 million**

Capital project management

Generate highest return on invested capital



“[IBM TRIRIGA] provides strategic decision-making tools, rather than just tactical applications, and it hits on all of the top priorities that executives need to accelerate and deliver cost-effective capital programs.” – Global Director, European Manufacturer

Main Features:

- Program and project portfolio management with funding request analysis
- Critical path scheduling, critical date alerts and automated reminders
- Consultant and contractor management processes and controls

Benefits:

- Generates high return capital projects that balance risks, financial and environmental returns
- Identifies critical tasks and processes to accelerate program and capital project schedules
- Automates procurement and contract life cycles to reduce change orders and overpayments

Results:

- **IBM TRIRIGA streamlined bidding processes within a major retailer to accelerate construction schedules by weeks**

Facilities management

Increase utilisation of facility assets



“TRIRIGA’s Strategic Facility Planning is just that. Strategic.”

– Michael Bell, former Research Vice President at Gartner, Inc.

Main Features:

- Scenario modeling and analysis for all types of facility planning—strategic, master and tactical
- Employee self-service with automated service management processes and controls
- Workplace reservation management for shared workspaces, conference rooms and assets

Benefits:

- Determines best-fit facilities planning scenarios to increase facilities utilisation
- Accelerates product/service and move requests to increase service efficiency and reduce costs
- Increases space utilisation to reduce occupancy and operating costs

Results:

- **IBM TRIRIGA identified inefficient space use for a European telecommunications manufacturer to help increase its facility utilisation by 17% and generated a net present value of savings of EUR54 million (USD73.8 million).**

Maintenance management

Extend the life of critical assets



“IBM TRIRIGA software will help implement our NexGen IT vision and give USAF a data-driven approach to manage its real property and physical assets, as well as help us predict issues before they impact service and safety.” – Chief Information Officer, U.S. Air Force

Main Features:

- Self-service and duplicate request management processes for corrective maintenance
- Preventive maintenance processes and integrated Service Level Agreements
- Condition-based maintenance processes

Benefits:

- Avoids costly dispatches of internal or external service providers to resolve duplicate issues
- Automates generation and dispatch of preventive maintenance tasks to extend life of critical assets
- Evaluates operational, financial and environmental returns to optimize capital investments

Results:

- **IBM TRIRIGA helped a U.S. Quick Service Retailer reduce maintenance repair costs by 42% over two years**

Environmental and energy management

Achieve sustainability goals



“TRIRIGA has emerged as a leader in carbon and energy management software based on its advanced capabilities and solid market momentum.” – David Metcalfe, Chief Executive Officer, Verdantix

Main Features:

- Pre-built integrations to building management systems and equipment sensors
- Real-time energy and environmental analytics
- Environmental funding analysis for capital projects such as energy efficiency programs

Benefits:

- Automates capture of energy, waste and water consumption data to accelerate data analysis
- Identifies inefficient assets and generates corrective work orders to increase energy efficiency
- Determines priority capital projects to generate highest financial and environmental returns

Results:

- **IBM TRIRIGA detects inefficient equipment and creates corrective actions in real-time at IBM to cut energy use by 12%**

Advanced technology platform

Extend facilities applications without changes to source code



“Customers who have migrated to IBM TRIRIGA’s current release 10.2 indicate that one of its key benefits is its flexible ease of configuration (as opposed to code customization) to specific business requirements.” – Gartner Magic Quadrant for IWMS (2012)

Main Features:

- Web-based designers for the configuration and reconfiguration of applications
- Meta-data model for data structures, user interfaces, business processes and reports
- Configuration migration capabilities for application updates and customer configurations

Benefits:

- Simplifies customer configurations to accelerate and reduce cost of implementation
- Eliminates changes to source code to reduce total cost of ownership
- Identifies conflicts between as-shipped and customer configured applications to protect customer configurations

Results:

- **IBM TRIRIGA simplified configuration of company-specific site selection processes at a Top 250 Global Retailer**

How IBM TRIRIGA helps ...

... make staff more efficient

Integrates real estate and facilities processes

Automates operational controls

Alerts to critical tasks and activities

... generate higher return on assets

Identifies inefficient assets and processes

Models alternative planning scenarios

Compares financial and non-financial returns

... mitigate compliance-related risks

Minimises penalties and overpayments

Automates corrective service requests

Audits decisions, approvals and processes

How IBM TRIRIGA helps ...

... make staff more efficient

Integrates real estate and facilities processes

Work order process assesses real estate leases to determine landlord responsibility

Automates operational controls

Generates required lease accounting reviews on quarterly basis

Alerts to critical tasks and activities

Highlights critical tasks within project schedules in red

... generate higher return on assets

Identifies inefficient assets and processes

Metrics highlight red, yellow or green status of actual performance against targets

Models alternative planning scenarios

Add or remove facilities to increase/decrease space use within trial environments

Compares financial and non-financial returns

Shows side-by-side comparison of costs, utilization and environmental impacts

... mitigate compliance-related risks

Minimizes penalties and overpayments

Lease payment processes identify landlord overcharges

Automates corrective actions

Issues work orders when building is heated and cooled at the same time

Audits decisions, approvals and processes

Captures user actions and approvals with before and after data values

Realize the benefits of IBM TRIRIGA



Teradyne Corporation

Smart Is: increasing facility utilization to save more than USD30 million.



IBM Real Estate Site Operations

Smart Is: the integration of energy and asset management to lower energy costs by 12 percent.



Global 100 company

Smart Is: transforming one of the world's largest real estate portfolios into a highly efficient, high-return operation to save USD925 million.

Thank You

Please give us your feedback



Your time is appreciated!

You've piqued my interest, I would like to talk to an IBM Sales Executive



David Small
M + 61 427 027 833
Email - dasmall@au1.ibm.com

I'd like to learn more about IBM TRIRIGA



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