SME Based Governance and How not to Get Burned.

Presented by: Walter O’Brien, CEO and Founder

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Risk Types

- Project management
- Functional
- Non-functional
- Deployment/CM
- Security
- BCDR
- SPOF
- Compliance
  (e.g. PCI, SAS70, HIPPA)
What is Governance

• Governance relates to decisions that define expectations, grant power, or verify performance

• Governance is:
  ▪ The rules about
  ▪ About fairness
  ▪ Doing what is best for the company as a whole
  ▪ “How we do” not “what we do”

*Like Charity - Governance Begins at Home*
What is Governance

- Minimizes politics, favors, nepotism, who you know, corruption, bending the rules and replace it with clear rules, consequences and a mechanism for decisions to add or change those rules
- Enables companies to continue in a firm but fair manner without a single point of failure
- Ensures consistency

*Consistency Trumps Compliance*
SME Based Governance ...

• Aligns business portfolio and needs to IT products, services, and processes

• Prioritizes work across IT silos; such as architecture, development, operations, network, project management

• Ensures service level agreements (SLAs) and operating level agreements (OLAs) are established and monitored

• Manages risk, change, and release processes

• Manages problem and incident processes

• Provides transparency of IT processes and services to the business
Benefits of SME Based Governance

- **Clearer:**
  - Decision making mechanism and appeal process
  - Direction and focus
  - Prioritization of initiatives

- **Less:**
  - Friction - a more pleasant place to work
  - Fire fighting/emergencies/last minute changes
  - Surprises, more Consistency

- **Improved:**
  - Scalable approach for company growth
  - Congruency - all on the same page
  - Forward planning and execution
Risks of No Action

• Ongoing process inconsistency, confusion, and frustration
• Teams revert to old habits
• Fire-fighting reactive approach
• Decline in morale
• Continuous reinventing the wheel
• Less productivity from constant interruption of service caused by fire-fighting
• Increase compliance and risk exposures
• Uncontrolled expenses and IT costs
• Outcome reflected in meeting or missing the company’s year end goals and objectives
### Audit Cost

<table>
<thead>
<tr>
<th>Audit Period</th>
<th>Hours</th>
<th>Cost</th>
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<td>June 1, 2000 - June 30, 2001</td>
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<td>June 1, 2001 - June 30, 2002</td>
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<td>June 1, 2012 - June 30, 2013*</td>
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*Indicates future estimate

Cost Rate Per Hour: 135

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<tr>
<th>Total to Date (2008)</th>
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<tr>
<td>Est Future Total (5 more years)</td>
<td>$188,057,252</td>
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Core Principles of SME Based Governance

- Clarity
- Consistency
- Compliance
- Containment
- Control
- Transparency
- Expertise
- Efficiency
- Improvement
Governance Categories

- **Govern People:**
  - Hiring, screening, and probation
  - Organization structure and charts
  - Decision rights and authority; such as veto, voting, and delegation limits
  - Clear roles, responsibility, and accountability
  - Communication
  - True separation of duty (SoD) by removing conflict of interests and role separation monitoring
  - Memberships, certifications, and education requirements
  - Motivators; such as bonus, promotion and consequences
  - Escalation reward and retaliation policies such as whistle blower policy
Governance Categories

- **Govern Areas:**
  - Risk, compliance, security, access authority
  - Disaster recovery
  - Practices areas such as quality
  - Processes such as software development life cycle, change, release etc.
  - Projects and portfolio demand
  - Tools usage and taxonomy

- **Govern Assets:**
  - Computers, technology, equipment, intellectual property
  - Budgets and people
  - Data, code, and products
Org. Structure without Governance
Org Structure with SME Based Governance

1. **Leadership**
   - Sets Business Objectives

2. **Executive Forum**
   - Refines Objectives To Departments

3. **Governance SME Work Group**
   - Prioritizes according to Department Objectives

4. **Staff & Resources**
   - Executes Priorities

The diagram illustrates the flow of objectives and responsibilities among these components.
Example: SME Based Governance Members

- Each core business area is represented:
  - Facilitator: John Doe
  - Operations: John Doe
  - Infrastructure: John Doe
  - Technology: John Doe
  - Finance: John Doe
  - eCommerce: John Doe
  - Marketing: John Doe
  - Risk: John Doe
  - Merchandising: John Doe
Elements of SME Based Governance

- Top down support of leadership, executive and governance forums
- Defined, approved charter, and bylaws
- Workflow and request tracking system
- Project registry and application registry
- Secured suggestions and known vulnerabilities list
- Documented SLAs, OLAs, roles, process descriptions, decision rights
- Glossary of key terms, applications, tools, process, and SDLC terms such as release and emergency release
- Managed FAQ with list of circumvents, forms, and templates
- Defined motivations and consequences procedures
- Remediation plans, exception, and escalation processes
- Defined staff communication and education practices
- Compliance rules, status tracking, and reporting practices
SME Based Governance Bylaws Include

• Names of SME's and departments represented
• Outline of authority and scope
• Agreed to decision making process such as a decision is made if:
  ▪ Two thirds or more of the departments agree
  ▪ A quorum is at least 50% attendance of the membership
  ▪ Everything is a decision

• How exceptions will be tracked and reported
• Defined escalation paths for issues and ties
Staged Approach

<table>
<thead>
<tr>
<th>Stage 0</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
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<tr>
<td>5-60%</td>
<td>20-60%</td>
<td>50-70%</td>
<td>70-100%</td>
<td>100%+</td>
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</table>

Today
Inconsistent

Mandate
Consistent

Mandate
Compliance

Begin Audits
Eliminate known
Vulnerabilities

Secret
Shopper
Sabotage

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“When failure is not an option”
Scorecards

“How do you know where you are, if you do not know where you have begun?” – Measure!

Define the baseline and measure improvements against it.
Governance Compliance Dashboard
Governance Compliance Dashboard

* Spot the stragglers and regressers
Governance Compliance Dashboard
* Single App Drilldown View

Timeline

Score

AA
MI
BTE
SDLC

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Compliance Improvement

- 30% compliant to 78% compliant in 6 months
- 30% increase in productivity and uptime
- 20% initial overall savings; 80% audit and compliance savings

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<th>Proj</th>
<th>Ver</th>
<th>Priority</th>
<th>1.2</th>
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SCORPION

“When failure is not an option”
Example of a Permissions Grid (AA)

<table>
<thead>
<tr>
<th>ID</th>
<th>Group</th>
<th>Area</th>
<th>DEVCM/DEVB</th>
<th>DEV/BSA</th>
<th>MGR</th>
<th>QM</th>
<th>User</th>
<th>Migration</th>
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<td>AA Role</td>
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<td>Developer</td>
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<td>Application Data Archive (Data Refresh)</td>
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Process and Migration
### Legend of Symbols and Elements

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<thead>
<tr>
<th>Symbol/Element</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td><strong>Pre-Dev State.000</strong></td>
<td><strong>SDLC State Pool</strong>&lt;br&gt;This is a container object that represents a Stage in the SDLC&lt;br&gt;All project events and milestones are listed within a Stage Pool. The date field located at the bottom of the pool represents the date of stage completion.</td>
</tr>
<tr>
<td><strong>2:OWN: Kick-Off</strong>&lt;br&gt;Kick-Off Meeting, Pre Requirements</td>
<td><strong>Project Stage</strong>&lt;br&gt;This is a container object that represents an SDLC stage&lt;br&gt;During that stage, a series of events occur. The stage name includes the stage class (dependency of the project class), leader roles that are involved, and the name itself. Below the name is a list of events that occur during the stage.</td>
</tr>
<tr>
<td><strong>Transition State 1 to 2</strong>&lt;br&gt;OWN State 2 - DEV CI/PM-Ver&lt;</td>
<td><strong>Stage Transition (Major Transition)</strong>&lt;br&gt;These represent the transition between SDLC states. Updates to the project registry are required, and are listed by the roles responsible for carrying them out.</td>
</tr>
<tr>
<td><strong>3:MG: Email SYS</strong></td>
<td><strong>Stage Transition (Minor Transition)</strong>&lt;br&gt;These represent the transition between SDLC stages. The black connectors represent forward movement, while the red represent reverse movement (usually due to a break freeze). If the transition should require action be taken by a project role, that role and the action is noted with the Project Class, Role, and action.</td>
</tr>
<tr>
<td><strong>CS:6</strong></td>
<td><strong>Required Prerequisite</strong>&lt;br&gt;Notation of a required prerequisite is found on top of the Stage Bubble. This represents a dependency of the current Stage and a previous stage. The previous Stage (shown by the number inside the box) must be completed before the tagged Stage is started (CS, “Cant Start”) or finished (CF, “Cant Finish”).</td>
</tr>
<tr>
<td><strong>BF</strong></td>
<td><strong>Stage Sign-off</strong>&lt;br&gt;This field is for the sign-off of the stage by the project owner. The Number represents the stage number.</td>
</tr>
<tr>
<td><strong>1. Init.</strong></td>
<td><strong>Break Freeze</strong>&lt;br&gt;This on page reference notates a Break Freeze. It requires backtracking and a roll back of the SDLC State.</td>
</tr>
</tbody>
</table>

### Roles Summary

#### Grouped Roles (Communication)
- **SYS** Systems Team
- **DEV** Development Team (Project Specific)
- **QAS** Quality Assurance System (All Testing Staff)
- **REST** External Team Roles (Project Specific)

#### Project Based Roles
- **OWN** Project Owner
- **OWN** Release Owner
- **QAO** QA Owner
- **QAR** QA Release Owner

#### Non-Project Based Roles
- **MGR** Team Manager
- **SUP** Team Supervisor
- **QAM** Quality Assurance Manager
- **SCM** Software Configuration Manager
- **BSA** Business Systems Analyst
- **DEVL** Developer Lead
- **DEV** Developer
- **MT** Manual Tester
- **ARI** Automated Results Interpreter
- **AS** Automation Scripter
- **FRA** Framework Architect
- **OCS** On Call Support

### External Roles / Teams
- **1:QAS:DEV: Weekly Status**
- **1:QAS:DEV: Initial Push to QAS**
- **1:QOS:DEV: Post-Dev Walkthrough**
- **1:QAS: Acceptable Risk**
- **1:OWN: TRD Email**

### Project Class Definition
- **Class 1** Low risk, patch, minor enhancement
- **Class 2** Medium risk, significant enhancement, minor feature
- **Class 3** High risk, major feature, new system

### Miscellaneous Abbreviations and Notation
- **Italics** Not yet implemented
Example of Project States

01 - Eval
  ↓
02 - Feasible
  ↓
03 - Planning
  ↓
04 - Design
  ↓
05 - Dev
  ↓
06 - SCM
  ↓
07 - QAS
  ↓
08 - Deploy
  ↓
09 - Prod
  ↓
10 - Closed
Example of Application Artifacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>04- Preliminary Evaluation.dot</td>
<td>46 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>07- Risk Analysis.dot</td>
<td>205 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>08- Risk Mitigation.dot</td>
<td>396 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>09- Feasibility Study.dot</td>
<td>47 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>10- Build Vs Buy.dot</td>
<td>45 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>15- Formal Evaluation.dot</td>
<td>46 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>21- Design Specification.dot</td>
<td>46 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>22- Project Plan.mpt</td>
<td>298 KB</td>
<td>Microsoft Project Template</td>
</tr>
<tr>
<td>23- Functional Specification.dot</td>
<td>46 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>24- Request for Development.dot</td>
<td>45 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>31- Test Plan.dot</td>
<td>50 KB</td>
<td>Microsoft Word Template</td>
</tr>
<tr>
<td>57- Project Management Post Mortem.dot</td>
<td>48 KB</td>
<td>Microsoft Word Template</td>
</tr>
</tbody>
</table>
Basis of Software Configuration Management

- Answers the following questions:
  - What changes were made?
  - Who made the changes?
  - When were the changes made?
  - Why were the changes made?
  - How are making the changes?
  - Are we sure the release will work?
  - How do we ensure 100% environment and release integrity?
Understanding the CM Role

• Configuration Management (CM) is the process of identifying and defining the items in the system, controlling the change of these items throughout their lifecycle, recording and reporting the status of items and change requests, and verifying the completeness and correctness of items (IEEE-Std-729-1983)

• Software configuration management (SCM) is the person who performs the software deployments and is often known as a CM or SCM for short.

• CMs or SCMs have the ability to reproduce a system environment from any point in time, reliably from a secured source (OMSS CM)
2.2 The Role of CM in the SDLC

CM acts as a support and control layer for every stage of the SDLC. CM is involved in everything from Pre-Development to pushing to Production. In the event of a Production problem, CM helps with Rollback or Data Recovery. CM provides the following services to the team during a project.
CM/SCM Benefits

• Standardizes branching and release management functions
• Ensures environment integrity
• Mitigates deployment risk, audit and security risks
• Defines and executes a consistent and repeatable process for application releases
• Central point of contact for development and project managers
• Increases release efficiency and diagnostic system capabilities
• Safeguards code repositories
• Manages all environments: Dev, prod support, P2P, UAT, training, QA testing, QA performance, QA regression
Mainline Branching Strategy
Projected Mainline Branching Strategy

106 Releases per Year

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Ensures 100% Environment Integrity
Software Configuration Management (SCM) Migration

- Announces build, runs pending merge report, resolves conflicts
- Refreshes build environment, merges mainline, builds and packages application
- Refreshes QA environment, installs production version, runs smoke test
- Pushes new version upgrade, runs smoke test
- Runs rollback procedures, runs smoke test
- * Refreshes QA environment, installs production version, runs smoke test
- * Pushes new version upgrade, runs smoke test

Removes the surprises out of code release.
As nothing new is released on a Friday night.
Workflow Deployment System

- Systems Vault (SVN)
- Delta/Patch Migrations
- Multiple Gold Masters 1, 2, 3...

- Non-Prod
- DevTest
- QA
- UAT/Demo
- Training, Other...

- Prod Staging / Production

- Parallel Migration/Rollback

- Site Gold Master 1
- Site Gold Master 2
- Site Gold Master 3

- Configuration Monitor (OACC)
- Systems Monitor (DDMA/DDMi)

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## Snapshot Versioning

<table>
<thead>
<tr>
<th>POS</th>
<th>Front End</th>
<th>Middle Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS Ver</td>
<td>GUI</td>
<td>G OS PB</td>
</tr>
<tr>
<td>E1.01.001</td>
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<td>W2k 7.0.2</td>
</tr>
<tr>
<td>E1.01.002</td>
<td>2.04.001</td>
<td>W2k 7.0.2</td>
</tr>
<tr>
<td>E1.01.003</td>
<td>2.06.001</td>
<td>W2k 7.0.2</td>
</tr>
<tr>
<td>E1.01.004</td>
<td>2.06.001</td>
<td>W2k 7.0.2</td>
</tr>
<tr>
<td>E1.01.005</td>
<td>2.07.000</td>
<td>W2k 7.0.2</td>
</tr>
<tr>
<td>E1.01.006</td>
<td>2.07.000</td>
<td>W2k 7.0.2</td>
</tr>
</tbody>
</table>

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“When failure is not an option”
5.1.3 | QAO - QA Owner

**Defined:** The QA Owner is the central coordinator who drives all aspects of project QA and acts as a liaison between DEV and QM. The QA Owner will be a QA team member assigned this role on a specific project whose responsibilities encompass the following:

1. Responsible for the SDLC actions with the specific project assigned.
2. Responsible for communicating with the QA Release Owner.
3. Must know where the project is at any time. (i.e.: current builds, environment locations, project documentation, etc)
4. Performs actions from SDLC:
   a. Attend Walkthrough with DEV Owner
   b. Perform Exposure Scrub
   c. Create/Modify Existing Test Cases. (See Documentation under point 8)
   d. Create A Project Specific Test Plan
   e. Review Bug Filters for bugs targeted in the current release (or not given a target release)
   f. Coordinate and verify completion of Smoke / Regression (automated) testing.
   g. Perform Manual Testing (or acquire resources for manual testing)
   h. Report Bugs (Verbal/Email to DEV team AND log in Quality Center)
   i. Follow up on Resolved Bugs
   j. Retest the scenario
   k. Close if corrected, Re-Open if not corrected
   l. Perform Risk Analysis
   m. Recommendation of the Release Based on Risk Analysis
5. Maintain adequate time for testing (DEV team likes to make changes in QA dates or break freeze and still keep same production target date).
6. Responsible for communicating with the DEV and CM team to ensure that the correct versions of local files are installed on your workstation.
7. Properly transition ownership when absent, on vacation, or sick.
8. Clearly document (or update existing) all testing procedures using Quality Center (Description, Design Steps, Attached Documents, etc.)
How Not to Get Burned
Do Not Underestimate Software

Your System
Software is a loaf of bread in an oven factory!

Source Code
Src Control
Build Environment
Config
Tools
Docs
3rd Party

Your System

Releases

Grouped Defects & Enhancements
Planning and Requirements Gathering

$1 \textit{change to requirements} = \$100 \textit{change to code}$

“Give me six hours to chop down a tree and I will spend the first four sharpening the axe.”
- Abe Lincoln
Rate of Change impacts Quality over time

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Rate of Change impacts Quality over time
Shared Services, Out-Sourcing, In-Sourcing, Off-Shoring

The Good News: They do exactly what you tell them

The Bad News: They do exactly what you tell them

Do you know exactly what to tell them is right?

How the customer explained it
How the Project Leader understood it
How the Analyst designed it
How the Programmer wrote it
How the Business Consultant described it

How the project was documented
What operations installed
How the customer was billed
How it was supported
What the customer really needed
Skill Separation

• One person who is your “Jack of all trades. Master of none.”

• Separate responsibilities into different roles of domain expertise:
  - CTO
  - Architect
  - Project manager
  - Business systems analyst
  - Developers
  - Administrators
  - Testers
  - Configuration managers
Go SPOF Hunting
Example: Skeleton Crew

- CTO*/Arch2/DBArch2 Part Time
- BSA*/PM*/QA*
- Dev/Arch
- Dev2/DBArch/CM2 Part Time
- CM/Tools*/DBAdmin* Part Time

*No redundancy needed

2 Indicates redundant resource
Sharing and Shoring

Shared Services, Out-Sourcing, In-Sourcing, Off-Shoring

The Good News: They do exactly what you tell them

The Bad News: They do exactly what you tell them

Do you know the exact right things to tell them?
The Real Savings

15-30%

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“When failure is not an option”
Contract Risk

• 3 unsolicited reference checks
• Plan for time frame x 2 with sliding penalty/bonus clauses
• Use Agile development & QA and agile payment; i.e. Pay as you go
• Define full SLAs and OLAs with response times, coding standards, naming conventions, and documented support agreement
• Defined UAT practices and documentation requirements
• Two stage lawyers (125ph then 400ph)

If you ever want to be sold, invested in. Old Spaghetti doesn’t sell!
Tips and Tricks

- Dry Read – Do it on paper, DBC Design by contract
- Virtualize everything ($500pm for biz)
- Cloud Cloud Cloud! (You are not in paperweight biz)
- Agile, RUP, XP – Just Iterate (2 weeks or less)
- Really escrow your ability to recreate production
- 80-20% the contractors to avoid being held to ransom
- An architects job is to lower your total cost of ownership and future proof the design (i.e. not paint yourself into a corner-OpenS)
Wisdom

• Good judgment comes from experience; experience comes from bad judgment
  -- Frederick Brooks

• Any sufficiently advanced technology is indistinguishable from magic.
  -- Arthur C. Clarke

• Walking on water and developing software from a specification are easy...if both are frozen.
  -- Edward V. Berard

• General Counsel Vs. IT General Counsel - it's complicated, it has it's own language, you need a special education to understand it, everything you do involves a contract, sign the wrong contract and you are in trouble.
  -- Walter O’Brien
Questions and Answers
Appendix
WHO WE ARE

- **Our mission:** Serve as a trusted expert advisor by providing firms with tailored business and technical solutions to enable their full growth potential.
- **How we work:** With a results-oriented business approach, we partner with clients from a variety of industries worldwide to add measurable value in mission-critical initiatives.
- **What we bring:** Our network of over 200 professionals collectively has the knowledge of more than 210 years in IT, 413 technologies, and 1360 projects. We leverage 177 IP solutions to drive best practices, accelerate initiatives, and reduce risk/cost.

WHAT WE DO

- **“Plan”**
  - Discovery & Strategy
  - Business Vision Definition
  - Assessment, Requirements & Roadmap Development
  - Technology & Vendor Due Diligence
  - Architecture, Data & Platform Design
  - Execution Strategy - In-house, Out-sourcing & Off-shoring
  - Governance, Compliance & QA/Risk Management Plan
  - M&A - Pre-deal Due Diligence & Integration Plan
  - Cost Reduction & Rationalization

- **“Execute”**
  - Delivery Management
  - End-to-end Execution – Project Management & Delivery Expertise
  - Virtual CTO, Architect, or Other Specialists to Augment Team
  - Systems Development Life Cycle (SDLC) Process & Methodology
  - Cloud Migration & Admin Services
  - Systems Configuration, Version Control, Build & Release Management
  - Proprietary Development or 3rd Party Software Integration
  - Security, Backup, Disaster Recovery, Redundancy/Failover

- **“Support”**
  - Quality, Risk & Compliance
  - Roll-out & Training/Knowledge Transfer
  - Regression Test Automation
  - Monitoring, Alerting & Diagnostics
  - Rapid Defect Elimination
  - Ongoing Support & Services (ITIL)
  - Change Management
  - Compliance/Regulatory/Audit (SOX, SAS70, PCI, HIPPA)
  - Decommissioning/Cost Savings Realization

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WORKING WITH YOU

Deep Dive Session
- Brainstorm specific topics of interest
- Develop and build a positive relationship
- Produce actionable next steps

Identify Services
- Identify services/scope - establish Statement of Work and potentially Master Services Agreement
- Pricing: T&M, fixed, or upside sharing

Deliver Results
- Solution implementation and/or training
- Pricing: fixed, volume, or complexity-based, with maintenance/support

Advisory Support
- Strategic partner in times of growth or emergency

DIVERSE EXPERIENCE

1998
- Early Systems
- Mobile Devices
- Virtual Reality
- Artificial Intelligence
- Manufacturing ERP

Today
- Globalization
- Finance & Trading
- Military
- Speech
- Security
- Computer Vision
- Maps
- Banking
- Shipping
- Networks

EXTRAORDINARY RESULTS
1. For numerous clients across industries, leveraged an efficiency engine that performs 250 human years of work every 1.5 hrs with over 99% improvement over human error.
2. For a leading trillion dollar global financial services firm, saved $43 billion in opportunity risks over a five-year period.
3. For one of the U.S.'s largest electric utility providers, automated safety control systems that ran 20 times faster than human testing and mitigated over $500 million in risk.
4. For a Wall Street trading system, achieved a 6000% increase in transaction processing speed.
5. For a financial services leader, drove compliance risk to zero and passed SAS70 audits 100%.
6. For a manufacturing firm, achieved savings of $52 million per year through automation frameworks.
7. For the world's second largest software company, achieved savings of $60 million per quarter using Translation Memory Technology.
8. For a mission critical system, managed over 400 SDLC release cycles with less than 0.02% error.
Thank You

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Email: info@ScorpionComputerServices.com

By Phone: (818) 237-9085