The Critical Roles of the Systems/Software Professionals and Attorneys in creating “Successful IT Contracts”

USC Software Engineering, 11/14/2011

Part I. IT Scorecard: How Systems Fail?
Part II. Why is it so difficult to develop “Successful” software?
Part III. The Purpose of IT Contracts
Part IV. The SDLC & IT Contract Connection
Part V. IT Related Contract Clauses

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PART I: IT Scorecard: How Systems Fail?
Standish Group: Chaos Study Results 2004+

CHAOS Summary 2009:
- success = 34% (delivered on time, budget, on target)
- challenged = 44% (late, over budget, < required F&F)
- failed = 24% (cancelled before complete; delivered & never used)

“…numbers represent downtick in success rates from previous study, and significant increase in number of failures — low point in last five study periods & highest failure rates in over a decade.”

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TOP PANACEAS (REALLY?)

1) Spaghetti-ed, Structured, Objectivized
2) CASE-d, Tooled & Retooled
3) TQMed, Quality Assured
4) Rapidly Developed (RAD’d) and RAIDed
5) Mainframed, Mini-ed, Micro-ed, Client-served
6) Reviewed, walk-throughed & inspected
7) BPRed, ERPed, CXYed, PMO-ed
8) Scripted, Relationalized, Downloaded, Integrated
10) Converged, Plugged & Played, Verified, Webified
11) Outsourced, InSourced, BackSourced, Off-shored
12) Benchmarked, Metered, SLA’ed, Hosted, Oracled, SAPed
13) Xtreme’d, Scrumped, Agiled, Leaned-on
14) Y2K’d, Windowed-7, 6 Sigma’d, Java-ed, Google’d
15) SOXed, Secure’d, Disrupted (service), Hacked,
16) Smart-phoned, i-Padded, i-Podded, & i-Tuned
17) Clouded, Klouted, Virtualized, Socialized,
18) Twittered, Facebooked & LinkedIn
19) I’ve been iOS 3, 3S, 4, 4S, & Android-ed

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NATURAL “PUSH/PULL” POINTS

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1. System doesn’t work
2. We can’t use it
3. System failed in field
4. Fundamental flaws
5. They s/have told us
6. System is full of bugs
7. Limited functionality
8. Developer failed @ SiPM
9. Poor advice
10. Unqualified personnel
11. Wrong devel process
12. We/they in Over Heads

1. Customer changed mind
2. Client people not trained
3. Client did not do BPR
4. Only “two more months”
5. They wouldn’t listen
6. Bad data/conversion
7. Customer kept change scope
8. Customer failed @ SiPM
9. Poor cust decision-making
10. Wrong client people
11. Poor client support
12. We/they in Over Heads

Oftentimes, BOTH sides are right & contribute to failure – but at different %s

SMART: Specific, Measurable, Attainable, Relevant, Trackable

PART II: Why is it so Difficult to Develop and Implement “Successful” Software Solutions?
PEOPLE!! PEOPLE WITH VERY DIFFERENT...

- Loyalties, Agendas, Goals, Priorities, Targets/Quotas, Fears
- Strategies: current v future; biz case; biz rqts/biz procs
- Cultural Bias; communication skills
- Sys Rqmts: capability/exper/education, 3 sources
  - F&F: B&D; Specified or implied
  - Non-Performance: $$; schedule; SDLC; QA; “usability”
  - Performance: “-abilities”; operating parameters
- HCD: Design & UI:
  - DD – Digital Dinosaurs: ~75+ yo
  - DI – Digital Immigrants: ~35-70 yo
  - DN – Digital Natives: ~15-30 yo
  - DNA – Digital Natives Always: ~2-10 yo

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SOME HUMAN CENTERED DESIGN (HCD) BASIC CONSIDERATIONS

“If it doesn’t work for people, it doesn’t work!”

- Shortcuts & workarounds - clinical wisdom
- Visibility of system status
- Match systems words to real world
- User controls and freedom
- Consistency & standards
- Error prevention
- Recognition rather than recall
- Accelerators (hot keys)
- Minimalist design
- Help to organize and recover from errors
- Helper documentation

From Dr. Hadar Ziv and Dr. Judith Olson Lecture, University of California Irvine (UCI); Joint INCOSE-LA/SPIN Speaker Meeting/Lecture; Nov. 8, 2011
More about Requirements

- Change is natural – must be embraced (M&A, new biz, consol, systems, vendors, opportunities, realities)
- Things done diff within/across the organization
- Buyer gets smarter; learning process; wants/needs/motivs)
- Technology changes (web, mobile, SaaS, DB, social, Cloud)
- The world changes and so do best practices, regs, laws, SOX
- Unwillingness to defer (YAGNI) or chg processes
- BUT Changes impact: $, Sched, Scope, QA, Risks, SH -BUT NOT linearly
- So you embrace it, But who pays/gives/takes?
- How do you K/manage scope change? CM?
- Initial est. is an ESTIMATE! Controlled not contingency

Customer Requirements … Still Critical!

Standish Group – 1995:
“18% of all sw projects fail due to unclear objectives & incomplete reqmts & specs”

Would you think it’s more, or less, today?
DEFINE SUCCESS?

✔ What is it?
- $, Schedule, Requirements, QA?
- Some MTBF? # of "Critical" defects?
- First to Market?
- Lowest Total Cost of Ownership?
- Get next round of financing?
- Meet Business Case, ROI, growth w less staffing?
- Better customer service? Shorter deliv cycle? > productivity?
- Meeting SMART SLAs?

SMART: Specific, Measurable, Attainable, Relevant, Trackable

✔ Is it being done? Correctly?
- Vague, not measurable, afraid to commit (limit)
- Not used as benchmark for requirements “chill”

Acceptance Criteria
- Post Go-Live maint, upgrade, enhance, SMART
- Did you Really check References?

ESTIMATING FACTOR IMPACT?

(From Dr. Barry Boehm's COCOMO Model)

As much as 2-3-4-5 times!!

Scale Factors
- Precedentedness
- Development Flexibility
- Architecture/Risk resolution
- Team Cohesion
- Process Maturity

Cost Drivers
- Personnel
  - Analyst Capability (ACAP)
  - Analyst Experience (AEXP)
  - Programmer Capability
  - Platform Experience (PEXP)
  - Language and Tool Experience (LTEX)
  - Personnel Continuity (PCON)
- Project
  - Use of Software Tools (TOOL)
  - Multisite Development (SITE)
  - Development Schedule (SCED)
- Platform
  - Time Constraints (TIME)
  - Main Storage Constraints (STOR)
  - Platform Volatility (PVOL)
- Product
  - Required reliability (RELY)
  - Database Size (DATA)
  - Product Complexity (GPLE)
  - Required Reusability (RUUSE)
  - Documentation match to lifecycle needs (DOCU)
### “What We THOUGHT vs What Contract SAYS”

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<table>
<thead>
<tr>
<th>#</th>
<th>Category</th>
<th>What was Understood:</th>
<th>What World-Class Contract Says:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Suitable</td>
<td>System description</td>
<td>Bounds scope; Uber-theme</td>
</tr>
<tr>
<td>2</td>
<td>What works?</td>
<td>Functional requirements</td>
<td>per ALL demos, designs, tests, doc specs</td>
</tr>
<tr>
<td>3</td>
<td>How well?</td>
<td>Performance reqmts</td>
<td>Scal- Port- Avail- Maint- Use- SMART</td>
</tr>
<tr>
<td>5</td>
<td>How We Do It?</td>
<td>Conduct of project</td>
<td>WBS, estim, staff, delivs, PM, SDLC, bugs</td>
</tr>
<tr>
<td>6</td>
<td>Just for ME</td>
<td>Custom program services</td>
<td>Config, SDLC, PM, est, test, l’face, maint</td>
</tr>
<tr>
<td>7</td>
<td>U prove 1st</td>
<td>Sys Integ/l’face/Test/Convert</td>
<td>Results NOT Resources; Def Success</td>
</tr>
<tr>
<td>11</td>
<td>$$ = Mouth?</td>
<td>Proposals, wkprod, promises</td>
<td>“Parole evidence” rule; 4 corners only</td>
</tr>
<tr>
<td>12</td>
<td>Go-Live</td>
<td>ALL Systems Go!</td>
<td>What’s acceptable? Checklist? Vote?</td>
</tr>
<tr>
<td>13</td>
<td>Other</td>
<td>Cost/Pymt; ADR; TERMInate; Renew; Title; X-hire; Site prep; Install hw, sw, nw, BPR; confid; $ protect; Liab limit</td>
<td>There’s more to THE Sys than A sys (SOS): $$ limits; penalties; ownership; holdbacks; remedies; liability limits; privacy; hot sites</td>
</tr>
</tbody>
</table>

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### Risks Known BEFORE Project Starts!

- **People/Resource Risks**
  - Turnover, culture, x-comm.
  - Top Mgt Commit; Proj Champ
  - Partner; Ref. Checks/Ref’s Refs

- **Requirements Risks**
  - Poor Project Charter
  - Defined, Baselined, Implied
  - Stability, Complexity
  - Incomplete, Misunderstood, Gallop
  - l’faces, Data Conversion

- **Technology**
  - Hw/sw/nw, D/B, Internet, mobile
  - Security; Privacy
    - C – Correctness
    - I – Integrity
    - A – Available
    - Tool avail? mature? train? use?

- **Project & Tech Mgmt Risks**
  - Client, Depts, Users, IT, Vend, O/S consults, attys, custs, analyst, mkt “expectations”
  - Unclear Leadership – SIPM

- **Process Risks**
  - Project under- or mis-estimated
  - SEI-CMMI level; ETC & EVM Stds
  - Sched, $$, estimates, change control
  - Not enough time for testing
  - Shortcuts to SDLC on the fly

- **Product & Other Risks**
  - Perform, testedness & readiness
    - abilities (scale, use, test, port, maint)
  - Competent T/O proc, supt, maint?
  - compet; economy; org; regulatory

If you know beforehand... Plan, Contract for, Mitigate, Monitor, Manage Them!

© 2006-2011 Warren S. Reid All Rights Reserved This model will change and be updated over time
SUMMARY: So What Can Be Misunderstood?!

- People are different
- People have different:
  - Objectives, perspective
  - Cultural bias, exp/educ/expertise
  - Styles of understanding/communicating
  - Abilities, talents, logic, creativity
  - Understanding of priorities
  - Fears: spoken and unspoken
  - Understanding of what is subjective v objective
  - Implied, understood, unspoken (needs, rqmts, sizzle)

So, what won’t be misunderstood?

Part III: The Purpose of the IT Contract
Why Are Contracts (K) So Important? & Why/What Must YOU Know About Them?

- **Caveat:** “Std K form” favors V/large Ks; used as sub for good mgt/K activity
- **Caveat:** K language often incomplete & ambig; drafters gone; shelf death
- **Clear/explicit delineation of Party rights** (Do/NOT Do!), obligs & expects
- **Requires ID, negotiation, apprec others’ views/beliefs/objectvs BEFORE deal**
- **Generally produces much better:**
  - working relationship during sane & emergency/surprise moments
  - prospect of proj success ($, Sch, F&F, QA, SH, Risk; <costs, staff, inv; >C serv, mkt share)
- **Must be a living document – able/willing to adapt to changes**
- **Best K team knows:** risks alloc, fin resp, strong sense of VALUE, legal skill
- **So, Best Team has:** CXO, CFO, biz domain & tech eng/consult, lawyer
- **Matters of:** Fact, Law, Evidence, Risk, Technology

Adapted From Dr. Barry Boehm’s MBASE model

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PART IV. THE SDLC & IT CONTRACT CONNECTION
Allocate Risks; Keep On Target; Helps Lead to Project Success

- The IT Contracts Model ties together seminal work of:
  - Richard (Dick) Bernacchi, Esq.
    - Partner Emeritus from Irell & Manella, LLP
    - A founder of the Computer Law field, and
  - Warren S. Reid, MS, MBA, CMC, CFE, CSQE, CSTE
    - IT expert w 40 years experience in IT contracts, litigation & expert witness areas
    - Book, monograph, peer reviewed articles author; "IT Success Models" Builder

- Model ties key tasks, decisions, deliverables & quality aspects of Systems Development Life Cycle with related, key IT contract clauses.

- The IT Contracts Model was created to enable vendors, integrators, PMs, executives & SMEs to better understand where/how they fit into the IT contracting process & to allow them to make informed & measurable contributions to IT Contract Team.

“All good methodologies are essentially the same!”
Warren S. Reid

Envisioning Phase
- Define a project structure
- Define the business goals
- Define high-level requirements and user profiles
- Define the project scope, schedule, and budget
- Assess risk

Planning Phase
- Develop the initial design
- Develop the configuration settings specification
- Develop the business process recommendations
- Develop the architecture design specification
- Develop the project plan
- Revise the project budget and schedule
- Reassess initiative risk

Developing Phase
- Identify the hardware for the proof of concept and the limited production pilot
- Prepare the web server and database server hardware
- Install the server software
- Configure the system
- Develop documented business procedures

Stabilizing Phase
- Establish the test procedures
- Create the test environment
- Create the test cases
- Conduct the tests
- Feedback to EPM team

Deploying Phase
- Deploy business processes
- Train user groups
- Confirm desktop connections
- Conduct business verification period
- Transfer to operations team
- Wrap-up initiative

*SDLC: Systems Development Life Cycle

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The Systems Development Life Cycle: SDLC

- Basics
  - Set Stage
    - Recitals
  - General Provisions
    - Parties To The Contract
    - General Reps & Warranties
    - Definition Of Terms
    - Assignment Of Delegation
    - Interpretation Of Agreement
  - Functional Rqmts/Perform Measures
  - Project Management
    - Project Timetable
    - Project Management & Reporting
    - Project Costs & Schedule Payment
  - Pre-Go Live Items
    - Site Preparation
    - System Configuration & Installation
    - Training
    - Documentation
    - Low Level, System & Integration
    - Acceptance Testing

- Customize & Convert
  - Custom Programming Requirements
  - Conversion & Support Services
- Personnel
- Maintenance
- Warranties
- Ownership & Protection
  - Title
  - License Rights
  - Proprietary Rights Indemnity
  - Confidentiality & Security
- Risks & Rights
  - Risk Of Loss/Damage
  - Insurance
  - Price Protection
  - Renewal Options
  - Purchase Options
  - Trade-In Rights
- Termination & ADR
  - Term & Termination
  - Limits & Exclusions Of Liability
  - Taxes
  - Miscellaneous Protections
  - Dispute Resolution Mechanisms
- Special Outsourcing Consids

The Systems Development Life Cycle (SDLC) & Its Relationship to the “Successful” IT Contract

- Basics
  - Set Stage
    - Recitals
  - General Provisions
    - Parties To The Contract
    - General Reps & Warranties
    - Definition Of Terms
    - Assignment Of Delegation
    - Interpretation Of Agreement
  - Ownership & Protection
    - Title
    - License Rights
    - Proprietary Rights Indemnity
    - Confidentiality & Security
  - Risks & Rights
    - Risk Of Loss/Damage
    - Insurance
    - Price Protection
    - Renewal Options
    - Purchase Options
    - Trade-In Rights
  - Termination & ADR
    - Term & Termination
    - Limits/Exclusions Of Liability
    - Taxes
    - Miscellaneous Protections
    - Dispute Resolution Mechanisms
- Systems Description
- Functional Rqts & Perform Measure
- Project Management
  - Project Timetable
  - Project Management & Reporting
  - Project Costs & Schedule Payment
- Pre-Go Live Items
  - Site Preparation
  - System Configuration & Installation
  - Training
  - Documentation
  - Low Level, System & Integration
  - Acceptance Testing
- Customize & Convert
  - Custom Programming Requirements
  - Conversion & Support Services
- Personnel
- Maintenance
- Warranties
- Special Outsourcing Considerations
Part V: Specific IT Contract Clauses:

Functional Rqmts & Project Mgmt (areas: 3, 4, 5, 12)

This Model contains 32 contract clause areas.

NOTE: Less than half of these can be drafted by an IT contracts attorney alone. The others require thoughtful input from CXO(s), CFO, biz domain & MIS leads/consultants.

Click for full size view of all contract areas:

http://www.wsrcg.com/PDFs/model_itcontracting.pdf

PRE GO-LIVE ITEMS

(areas: 6, 7, 10, 11, 14, 15)

This Model contains 32 contract clause areas.

NOTE: Less than half can be drafted by an IT contracts attorney alone. The others require thoughtful input from CXO(s), CFO, biz domain & MIS leads/consultants.

Click for full size view of all contract areas:

http://www.wsrcg.com/PDFs/model_itcontracting.pdf
(A) **Set the Stage**

1. **RECITALS (A)**
   1. V’s areas of expertise, experience, etc.
   2. B’s business & data processing requirements
   3. V’s ability or experience to handle B’s reqmts
   4. Specification/exec of a quality RFP process; required V services
   5. B’s issuance of Request For Proposals (RFP)
   6. V’s proposal response to B’s RFP; feasibility, honest, suitability
   7. Additional docs or communications between B & V
   8. Proposal evaluation factors & assumptions affecting B’s decisions

2. **DESC OF SYSTEM (A)**
   1. Component desc/specs hw, sw, nw, media, wire, etc.
   2. Configuration warranty
   3. Desc & specs for sys sw; current; complete; usable
   4. Description & specs for packaged apps sw
   5. Desc & specs for custom mods to packaged apps
   6. Desc & specs for custom sw apps to be devel by V
   7. List & Desc of all manuals, system & user docs, etc.
   8. Incorporation RFP, proposals, brochures, mktg mats, etc.
   9. Sys Def (5 Rs: Right person; truck; tools; ad dr; time
   10. Definitions of other terms & relat’shp to system
   11. Testing: proc; types; rqmt; tools; staff; doc; S/O; crit
   12. X-ref to other K provisions & exhibits (inc Biz Case)

(B) **What IS the Bargain?**

3. **FUNCT RQMTS & PERFORMANCE MEASURES**
   3.1 Desc of biz funct to be performed (or x-ref to RFP)
   3.2 Rqmts Elicitation (RE)/Scope Change Process
      - ID specif Users/Classes; assure sched availability
      - Prep timeline; ID RE technq/tools/dos/cd used/produced
      - Scope change process: proposed, est all impacts, deci crit, dec, update ests, CPM, staff, monitor
      - Embrace changes: Iterative, Incremental, Interactive
   3.3 Incorporation of Functional Requirements Docs
      - Rqts incl: success crit; ‘-abilities’; F&A current/future; UI; rpts; biz proc & rules; ops parms; doc map; RTM;
      - GAPs/changes; rollout plan; test results; sys.stabil;Go-
      - Live checklist; rqs change process/tools; defer/tradeoff;
      - training plan; converted data; legacy style; security passwords; enabled Ops. Maint. Groups, etc
   3.4 Income of V’s proposal(s), website, market’g matl, etc.
   3.5 Performance Parameters:
      a. Relationship to functional processing rqmts.
      b. Types & volumes of data to be stored
   3.6 Performance “-ABILITIES”
      - SW QA: [‘-abilities’] hw, sw, nw, architecture
      - USERS (Extl); Avail- Depend- Flex- Integ-
      - Open- Reli- Modif- Use- Scala Safety Secur-
      - Surviv- R&R- Config- Util; $ Effect [vs benchmk]
      - DEVS (internal): Adapt- Audit- Deploy- Reuse- Test-
      - Interop- Maint- Perform- Port- Extense- Struct-
      - Manufact- Trace- Reuse- TEST-Struct-
   3.7 Relationship to acceptance criteria & testing
   3.8 Relationship to ongoing maintenance reqmts

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**Project Management**

### 4. PROJECT TIMETABLE

4.1 Definition of project tasks
4.2 Definition of deliverables for each task
4.3 Estimating method used; assumptions; update processes
4.4 B’s responsibilities; V’s responsibilities
4.5 Target completion dates by task
4.6 Final completion dates by task
4.7 B’s right to delay or cancel project tasks
4.8 Major performance milestones & relate to payment schedule
4.9 Delay remedies & bonuses for early performance
4.10 Relationship to termination rights
4.11 Prompt notice of anticipated delays

### 5. PROJECT MGMT (PM) & REPORTING

5.1 Steering Committee role, structure, makeup, processes
5.2 SWAT Team role, structure, makeup, processes
5.3 Named Sys Integrator’s role, responsibilities, accountability
5.4 Description of V’s project team; Description of B’s project team
5.5 Designation of V’s PM; Designation of B’s PM
5.6 Determine SDLC method to be used; rules to deviate
5.7 PM Tools/Measures: EVM; CPM; ETC; $/schedule variance
5.8 V’s responsibility for PM; project reporting: format; frequency; distribution; detail
5.9 V’s/B’s responsibility: BPR/new process development, link, train, test, approve
5.10 V’s responsibility to identify, manage, mitigate risks, problems, delays
5.11 B’s responsibility to address V’s problems/recs in project reports
5.12 B’s responsibility to assist V
5.13 B’s responsibility for project problems or delays
5.14 Relationship to project timetable
5.15 Remedies for loss/reassignment of V’s Project Manager (PM)

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### 12. PROJECT COSTS & PAYMENT SCHED

12.1 Hardware prices, if purchased (including “bundled” software)
12.2 Software prices, if purchased (if not stated separately)
12.3 Rental or lease payments & method of calculation
12.4 License fees for software
12.5 Training fees
12.6 Maintenance fees for equipment &/or software
12.7 Fees or charges for other services
12.8 Partial payments tied to major milestones
12.9 Start date for rental or lease payments
12.10 Commencement date for license fees
12.11 Commencement date for maintenance fees
12.12 Credits or offsets for delays or failures
12.13 Refunds if the contract is terminated
12.14 Most favored nation clause
12.15 No mods/addl charges w/o written approval
12.16 Invoicing procedures
12.17 Supporting documents
12.18 Required notice for price increases

12.19 Personnel/services rates to price change orders
12.20 Limits on price increases
12.21 Right to benefit of price reductions
12.22 Relationship to K remedies
12.23 Payments under protest
12.24 Offset rights
12.25 Relationship to dispute resolution mechanisms
### 10. TRAINING (D)
10.1 V’s obligation to provide training
10.2 Qualifications of trainers
10.3 Location of training
10.4 Stds for acceptable performance
10.5 Relationship to timetable
10.6 Relationship to proj costs
10.7 Avail of student mats
10.8 Avail of instructor’s mats & training
10.9 Number of trainees
10.10 B’s rights to reproduce & use training mats
10.11 Continuing Avail of std V classes
10.12 Continuing Avail of on-site training by V
10.13 Remedies for delays in provid suitable train

### 11. DOCUMENTATION (D)
11.1 Desc of doc types; Docs stds: user, test, system docs
11.3 Relationship to proj timetable & performance measures
11.5 B’s rights to reproduce & to future docs/enhancements
11.7 B’s rights to source code & related docs
11.8 Remedies for delays or inadequate docs

### 6. SITE PREPARATION (D)
6.0 ID general contractor; roles/resp; liens; overall schd
6.1 Preparation & delivery of site prep specs
6.2 B’s (or V’s) obligation to prepare site
6.3 V’s obligation to clarify specs
6.4 V’s obligation to inspect & certify
6.5 Remedies for improper site preparation
6.6 Remedies for inspection errors
6.7 Effect on project timetable

### 7. COMPUTER CONFIG DELIV & INSTALL (D)
7.1 Delivery of complete equipment configuration
7.2 Delivery of operating sys & other system sw
7.3 Access to site
7.4 Installation obligations of V
7.5 Installation obligations of B
7.6 Diagnostic tests/relation to Accept Test provision
7.7 Def of completion of equipment installation
7.8 Remedies for delays in delivery or installation
7.9 Relationship to termination rights

### 14. LOW LEVEL, SYS & INTEGRAT TESTS (D)
14.1 Diagnostic tests of hw, infra, netware
14.2 All Kinds of Systems:
   - End-User; MIS; Outsourced; Commercial;
   - Military; Operat’g Systems (latent error stats avail)
14.3 All manner of tests for funct & ‘abilities’ incl:
   - **Dynamic tests**: ~85% including:
     - white/black box; sub-routine; unit; integ, system
     - interface, data audit, test of/w converted data
     - new funct; regression; performance; capability;
     - Independ V&V; security; acceptance; beta
     - ‘ability’ (use’, scal-, port-, maint-, reuse-, recover-, bullet, and many more
   - **Static Tests**: ~15% including:
     - reviews; walk-throughs; inspections
14.4 For each test level consider no. of tests and:
   - Goal, objectives, success criteria
   - Def of accept results to move to next test level
   - Test tools: decide, acquire, train; # test environs
   - Expert test staff: leads, SMEs, analyst, testers, QA
   - Test: sched, training, environ, equip; access
   - Test results review: who, when, turnaround time
   - No. of shifts, def of scenarios; end-to-end tests
   - Std test docs; signoff; rigor & format of error logs
   - Rigor of error root cause id, est to fix, fix process
   - Test metrics to rept progress, issues and probs
14.5 Desc of error severity levels/time to repair each
14.6 Escalat Process; SWAT - SW Adjudication Team
14.7 Maintenance service during testing
14.8 Relationship to performance measures
14.9 Remedies for failure to meet test criteria
14.10 Relationship to termination rights
(D) **Pre- Go-Live Tasks**

15. ACCEPTANCE TESTING (D)
15.1 Live or simulated environ; w new BPR
15.2 Desc of test data & prep responsibility
15.3 Desc of test procedures & criteria
15.4 Relat’ship to funct rqts & perform stds
15.5 Period of testing
15.6 Review of test results
15.7 Correction of errors & problems
15.8 Definition of acceptance
15.9 Remedies for failure to meet accept criteria
15.10 Relat’ship to warranty/maint provisions
15.11 Relationship to termination rights

(E) **Customize and Convert**

8. CUSTOM PROGRAMMING SERVICES (E)
8.1 Incorp of funct processing rqmts docs
8.2 V’s obligation to develop custom apps
8.3 Relat’ship to stipulated perform measures
8.4 Relat’ship to proj timetable
8.5 Development by V of detailed design specs
8.6 Review/approv by B of detail design specs
8.7 Specification of programming stds
8.8 X-ref to system, program, & user docs stds
8.9 Specification of change order procedures
8.10 X-ref to system/acceptance test provisions
8.11 V’s resp for acceptable unit/sys test proc
8.12 V’s obl to deliver source code/related docs
8.13 Relationship to project timetable
8.14 Remedies for delays in completion
8.15 Relationship to termination rights

9. CONVERSION & OTHER SUPPT SERVICES (E)
9.1 Data conversion
9.2 Application program conversion
9.3 Development of test data
9.4 Assist B with site acquisition &/or prep
9.5 Assist B in acquiring other products/services
9.6 Assist to B in locating & screening employees
9.7 Coordination of telecom procurement
9.8 responsibility for trouble-shooting
9.9 Assist to B with development of backup plans
9.10 Assist to B with backup arrangements
9.11 Assist to B in developing security plan
9.12 Assist B in develop’g disaster recovery plan
9.13 Pre-installation machine time
(F) Personnel

13.1 V’s staff qualifications/B’s approval/denial rights; Staffs’ evals; courses taken; experience & expertise
13.2 Application certified/certificates; Updated CMMI rating
13.3 Periods of Availability
13.4 Prohibitions against interruptions in Availability
13.5 Temporary replacements for sickness, etc.
13.6 Right to request replacements
13.7 Prohibition against removal or reassignment
13.8 Ability to pass on V’s staff salary raises to B

(G) Post Go-Live Services

16. WARRANTIES (G)
16.1 V’s financial condition
16.2 Hardware warranties
16.3 Software warranties
16.4 Service warranties
16.5 Pass through of third party warranties
16.6 Relationship to performance measures
16.7 Start date(s)/length of warranty period(s)
16.8 Relation to maintenance provisions
16.9 Scope of warranty obligations
16.10 Remedies for failure to meet warranty obligs
16.11 Assignability of warranties
16.12 Relation to disclaimers & Limits of V’s liabs
(G) Post Go-Live Services

17. MAINTENANCE (G)
17.1 Start date(s) & length of maint period(s)
17.2 V’s termination rights
17.3 Required notice for termination
17.4 B’s renewal rights for guaranteed period
17.5 Relationship to performance measures
17.6 Types & Desc of maintenance support
17.7 Notice of defects or problems
17.8 Classific of types & criticality of maint probs
17.9 Required dispatch or respond time(s)
17.10 Escal of maint suppt if delays to correct probs
17.11 Maximum repair time
17.12 Uptime guarantees
17.13 Replacement of “lemons”
17.14 Avail of spare parts or components
17.15 Limits on Vs refurbishment rights
17.16 B’s rights to perform maintenance
17.17 B’s rights to maintenance manuals
17.18 B’s rights to maintenance training
17.19 Limits on B’s rights to perform maintenance
17.20 Remedies for delays in providing adeq maint
17.21 V’s obligation to coordinate third party maint
17.22 B’s right to get maint o/s principal maint per’d
17.23 Limits on increases in maintenance fees
17.24 B/U equip avail during extended maint periods
17.25 B’s rights to future enhancements
17.26 B’s rights to assign maintenance rights

(H) SPECIAL OUTSOURCING CONSIDERATIONS

33. BIZ CONSIDERATIONS & RISKS (H)
33.1a “59% of all O/S Ks fail” (Compass ’05; Forrester ’07)
33.1b SOX/Regs adherence; No subbing to China
33.1c Think w/cost 70-80% less but only profit 20-30%
   In fact, most report 1st year savings of 0%
33.1d ’Please You; Don’t Ask?;’ 90% of time w/say ’OK’
33.1e Time Zone diff; Infrastructure poor; 22 official langs;
   too many polt parties; Turnover by “Group/Floor”
33.1f Security/privacy laws: cyber crime; terrorism
33.1g Must have both orga' staff on both sites; Build trust
33.1h Define Success (iterative, incremental, interactive)
33.1i OS in international market w/o int. ops experience
33.1j Not using variety of perspectives in selection process
33.1k Using poorly devel/documeneted serv/prod spec
33.1l Not doing biz/financial due diligence on OS candid
33.1m Insufficent knowledge of OS capacity limits
33.1n Not resolving osps issues b4 move to K legal aspects
33.1o No full com plan in effect, incl escal, reg sch meets.
**H)** OUTSOURCING CONTRACT CONSIDERATIONS

33.2 CONTRACT (“K”) CONSIDERATIONS (H):

33.2 Change process: biz, staff, tech, ind stds, laws, regs, efficiency gains. Limit OS ability to charge for such changes.
33.3 Train both Cust & OS mgm & ops on O/S K
33.4 Proc to request new service, change, proj.
33.5 Right to use 3rd pty OS 2 in-re-source
33.6 Control of arch, tech, and org change stds
33.7 O/S obligs to pace/refresh w tec advances
33.8 SLAs: how they wk, credits, impr oblig/chg
33.9 Commitments regarding supplier staff
33.10 Financial terms
33.11 Ownership of custom deve & work prod
33.12 Term, termination assist services/rights
33.13 Min retent’n 4 transitioned/LTerm key Ees
33.14 Diff for single silo OS than big bang tranx
33.15 Keep staff knowl: apps, biz, tec, OS proc
33.16 K prov to secure appropriate supplier talent:
33.17 K prov to limit sub’s use (e.g., to China)
33.18 Limit unnecessary charges: data recovery; re-perform services
33.19 Baseline OS resources for ongoing support/projects to allow B to reprioritize services and reassign OS resources
33.20 K s/require O/S to track (at min): asset type/location, ID, ser/model #s, in serv data; sw/hw vers/upgrades; if own, lease, license & fin resp party; Apps tied to server; Changes
33.21 Coop Obligations; betw O/C/3rd parties; staff; facilities; equip, sw, doc, biz proc access; additional O/Ss;
33.22 K $$ 33.22 K $$ 33.22 K $$ 33.22 K $$ reduct, commits, proc imp, stds imp;
33.23 SLA improv’ts (esp if SLAs met but service unsatis
33.24 Termination: Termination assist: doc plan; staff; all equip, sw, mat, data, 3rd party tools to provider services; train C/3rd party in equip, sw, data, same; Right to employ Os staff; Right to purchase equip/assign leases
33.25 Attorney’s role does not end when deal signed!

Some Important Legal Clauses/Thoughts In Virtually ALL Contracts (IT and Otherwise)

- Assumptions and Goals
- Do You Really Want to Litigate?
- Attorneys’ Fees
- Don’t Do A Contract Until You Know What Is Being Delivered
- Venue
- Choice of Law
- Under the Subject Matter
- Indemnification
- Alternative Dispute Resolution
- Arbitration
SUMMARY

1. Scratched underside of the Iceberg
2. Both sides Lose in Litigation: See it from both sides
3. Contracts allocate risk: Get it in writing → Up front
4. Negotiate for “Intention”: NOT “Principle!”
5. Here are our needs! YOU develop clauses! We select best!
6. Be Flexible: everything not = in importance or linear
7. If you want to end w Success, start w Success
8. You NOW know the risks! Manage them!
9. Perform OUTSTANDING Reference Checks
10. Follow good methodologies
11. Measure: Quantity & quality, Progress & Status
12. No Panaceas: Consider SWAT, Mediation, ADR

AFTER YEARS OF EXPERIENCE:
THE GOLDEN ANSWER!

\[ d(y)^h : f(y)^p + \int(l) + \int(c) = P^2R \]
AFTER YEARS OF EXPERIENCE:
THE GOLDEN ANSWER!

\[ d(y)^h : f(y)^p + \int(l) + \int(c) = P^2R \]

QUESTIONS/COMMENTS

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http://www.wsrcg.com/PDFs/model_RFP.pdf
http://www.wsrcg.com/PDFs/model_itcontracting.pdf
Warren S. Reid: Background

- 16 years IT consultant → Partner IT Firm
- Designed/implemented/contracted myriad systems
- 1988, founded: 
  WSR Consulting Group, LLC
  Consultants/Experts in Computers & Software
- Testifying expert witness in matters re:
  + The root causes of system failure
  + ERP project/sw: development; implementation; estimating; scheduling; resourcing; project mgt
  + Systems Development Life Cycle (SDLC) issues
  + Definition of “World-Class” IT
  + Systems/software testing & acceptance
  + IT contract intention, meaning & interpretation
  + SW QA evaluation & fitness/usability purpose
  + Software requirements elicitation & control
  + Valuing IT assets, systems and companies
- Projects have included:
  + Helping launch FEO for Pres. Carter in 75 days
  + Oversaw acceptance of CA’s Lotto in 100 days
  + Helped resolve MESDAQ: day 1 failure.
- Extensive industry experience including:
  + Retail industry, grocery, fast food
  + POS systems of all kinds; E-business/e-comm
  + Health care, hospital and HIPAA systems
  + Robotics and smart buildings, and more
- MS & MBA: Wharton Grad School Finance
- Developed seminal “IT Success Models”
  + Guest Lecturer at USC’s grad school programs
  + Lecturer in law school programs in IT Contracting
  + Many peer-reviewed articles/MCLE video for Attorneys (3.5 hrs. MCLE credit)
- Testimony: Mediations, Arbitrations; US State/Fed Courts; Court of Fed Claims; International Forum
- International Expert Witness in IT matters:
  + U.S. Dept of Justice & Pres. William Clinton
  + An Asian Stock Exchange; Pepsico; Harrahs Entertainment; B-to-C Internet companies
  + Her Royal Majesty, the Queen of England;
  + Compuserve; Fortune 500 retailers; Robotics manufacturing; Distribution companies; POS cases; Big 8 Consulting Firms
  + ERP software developers and systems integrators
  + International ticketing companies

APPENDIX I ON:
WHAT IS “WORLD-CLASS SOFTWARE”
INTRO: A FEW WORDS ABOUT “WORLD-CLASS SOFTWARE”*

- More and more IT contracts state that “products and services to be delivered will be world-class”
- Right off, there is no universal IT or legal standard to compare/determine if product/service is “world class”
- Not properly identifying/specifying/designing requirements is a sign of laziness or an admission that the buyer doesn’t know what it needs/wants or is afraid it may leave something on the table.
- This oftentimes results in lawsuits between the parties
- It is possible to define “best practices & world-class” for some IT constructs – such as: IT organizational and SDLC processes; the Right Results; Operational Excellence; and Robust Life Span.
- However, World-Class functionality is: situational; unique to buyers’ & providers’ business strategies, org structure, and human/other resources; definition of “success”; regulatory requirements, industry customs, etc.
- And World-Class functionality will change over time, as corporate mgmt & strategy changes, new IT breakthroughs evolve, competition invades, etc.

* This slide will be explained in detail in the following slides.

SO WHAT IS “WORLD-CLASS” SOFTWARE?

It helps to be a world-class IT organization with many “best industry” processes and practices...in order to build world-class systems/products.

But, What is world-class software and How do you deliver it? i.e.,

Deliver:
- sustainable,
- appropriate quality products
- on-time,
- on-budget, with
- world-class functionality, while
- managing stakeholder expectations &
- Mitigating product/project risks,
- for a profit
FOUNDATION: IT ORGANIZATIONAL & DEVELOPMENT PROCESS “BEST PRACTICES”

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- Not Perfect
- Embrace Change; Flex
- Sustainable

- QA is a Priority
- Embrace Change; ICM
- Standards; Deviations
- Do what’s right 4 proj.
- Prob; #Rqmts; #Procs;
- #Solut; #Designs; #Langs

- The Balancing Act
- Manage: risks; resources
- Interim Deliverables
- Exec/Proj Commitment

- QA is a Priority
- Embrace Change; ICM
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- #Solut; #Designs; #Langs

- The Balancing Act
- Manage: risks; resources
- Interim Deliverables
- Exec/Proj Commitment

CAVEAT: To Be WORLD-CLASS you need NOT excel in every area. You need to excel in several areas critical to your operations/product, and be good enough in others. No world-class org or product is perfect: Apple iPhone4 antenna prob (2010); Intel $1bb chip error (2011); Toyota, etc.

*SMART: Specific, Measurable, Attainable, Relevant, Trackable

PILLAR I: THE “RIGHT STUFF” (RESULTS)

Create Scope Boundaries


The “RIGHT” Stuff

Provide Correct, Auditable & Accurate Results

Vary by Industry & Strategy

Focus

Focus

Grocery Store Chain:
- the right goods, at
- the right price, at
- the right store, at
- the right time, in
- the right place

Phone Install/Service:
- the right truck, with
- the right operator, with
- the right tools, at
- the right address, at
- the right time

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PILLAR II: OPERATIONAL EXCELLENCE

Operating reliably while managing surprises and issues.

Keeping stakeholders “happy”

Migrating, maintaining, integrating, upgrading, fixing, enhancing, as needed

OPERATIONAL EXCELLENCE: SUITABILITY

WCS should operate reliably for intended purpose! IT criteria include:

A. Ops – approp staff, budget, training, rotation, org, plan, contracts, etc
B. Testability – implemented reqmts are clear, unambiguous, internally consistent
C. Usability – logical nav; consist screen design/use, data production – Audience??
D. Resp times – processes, actions, ops, trnx @ speed expected, custom, specified
E. Stability – operates w/o frequent, regular or unexplained crashes or freezes
F. Throughput – handles peak transaction volumes w/o significant perform degrade
G. Reliability – operate when components “break” fm in/outside events; Fault Toler
H. Redundancy – effective failover mechs for ops/trnx to continue processing when sw module, hw component, or network linkage fails. No data lost.
I. Recovery – invokes proper back-up, R&R fm unexpected/external ops interruption.
J. Documentat’n – matches sys ops; true release notes, mats, sw work as expected.
K. Security – P&P that protect data, nets, apps, compute power thru encryption, access controls, authorization levels, passwords and more.
L. Help Desk & Support Org – effective; incl use of remote netware/sw monitor, tools
M. Issue Escalation Process – effective to address probs/issues in timely manner
PILLAR III: ROBUST LIFE SPAN:
ABILITY TO ADVANCE/GROW

Ability to keep what was 1st built and implemented properly maintained and sustained:
- relevant,
- competitive,
- advantageous,
- useful
- usable; “irresistible”
- efficient
- effective
- TCO
- Affordable (ROI)

ROBUST LIFE SPAN: FOR MANY YEARS – BUT CHANGING

A. Functional Stability – sys meets clear goals/objectives, w well-defined roadmap
B. Design stds – w consistent: SOS, tables v hard code, localized biz logic, shared infra/services, approp/tested APIs, necessary GUI. DB w self-correct integrity
C. Code stds – adherence to “best” coding standards that allow mods by IT personnel; adheres to industry standards for architecture, design, interfaces.
D. DB stds – data model/DB built allowing updates/data mgmt as user needs evolve.
E. Doc stds – documented accurately to facilitate efficient diag/repair of bugs/issues, & to efficiently add new funct that does not interfere w current funct
F. Comp maturity – built w industry std components to be updated as tech improves.
G. HW & NW stds – built to allow deploy on multi-platforms; facilis hot-swap comps.
H. Scalability – allows ++ capacity as tranx vols >, w/o signif perfor m degrade/$ incr
I. I’faces/APIs – provides/facils sys interconnections/add new sw/comps
J. Interoperability & Portability – functions/interoperates w diff vendor hw, o/s, DBs
K. Maintainability – stringent design stds permit quick/effic error isol & allows for modif/new funct to be put into sys in proper place following ind std prog practice
L. Modular Arch – proper/consist segreg/encaps of module SOS, biz logic, etc. to min + errors into sys, easier test/debug, reduce dev/maint sch, accom personnel chg.
M. Sustainability – sys/dev/support orgs, w proper visibility, charter, QA, Mgt, SDLC to improve nec funct/perform w controlled chgs/succ releases, interop, new tech
N. Internal Controls Policy – match, balance, audits, crash tests, access, security, etc

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OK! SO NOW DO YOU HAVE WORLD-CLASS SOFTWARE?

- NO! Again, there is no universal IT nor legal definition of "World-Class Software!"

- Because the stakeholders & parties still haven't defined what that is in terms of 'Features & Functionality'!

- Even achieving all of the "Best in Class" Foundations, Pillars, and constructs, you still need to:

  - Elicit, Define, Manage, Document the Specific, Situational, Business, Personal, Functional & Feature Requirements – regardless of which architecture, platform, SDLC method you use

- And that is still a very difficult challenge!!

WHICH ARE THE WORLD-CLASS HANDBAGS?? IT DEPENDS...

- Chanel: $5,000
- Coach: <$400
- Louis Vuitton: $1,610
- Ivanka Trump: $95
- R Minkoff: $195.00

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WORLD-CLASS GUITARS?? FOR WHAT KIND OF MUSIC? IT DEPENDS...

WHICH IS A WORLD-CLASS CELL PHONE?? IT DEPENDS