DO YOUR HOMEWORK!
HOW MUCH DID YOUR LAST
AV SYSTEM REALLY
COST YOU?

Mario J. Maltese CQD, CQT, CTS-D, I
CCUMC Convention, Pittsburgh PA
October 14, 2015

About AQAV

AQAV is dedicated to improving the operational art of
designing and installing audio visual technology by
focusing on the quality management systems of
those who design and install for the benefit of the
industry and all its stakeholders: clients and users of
AV technology, AV designers and installers,
equipment manufacturers, related constructions
and architectural firms, and the environment.
AV Technology Today

- The new Dynamics
- Other Industries
- Attaining Success
- AV9000:2015
- The Step by Step Approach that Works

Knowledge = Understanding
STOP AND CONSIDER...

• Are your installations completed on time from your perspective?
• Are there “punch-lists” (defects) when the system was supposed to have been completed?
• Are service personnel dispatched to jobsites for “warranty work” that is actually completing the installation?
• Do you have regular user complaints for functional issues?

Also consider...

AV is much more complicated these days...
• Equipment ‘talks to each other’
• Performance exceeds human requirements
• New technologies emerging constantly
• Fierce competition by manufacturers effects AV companies
• AV Companies used as “alpha testers”
• Training requirements escalate
Why Should I care?

Because your vendors' costs affect your price!

AV Disasters

• Overtime costs
• Lost customers
• Never ending punch-lists
Consider:

- **Customers have become more demanding** for quality performance, to the point that they no longer trust anyone in AV can deliver quality.
- Due to this demand, **traditional approaches, practices and techniques become obsolete**, and quality performance is no longer value-added, but baseline qualification.
- **The Cost of Poor Quality (COPQ) are not easily visible**, but hidden in the managerial reports of most organizations. These costs are often higher than the profits, and for some, undermines their competitive position.

Individual Skills Fall Far Short!

- Current industry training focuses on individual skills, with ANSI certification.
- InfoComm has been using a “Solutions Provider” marketing recognition program rewarding companies based on the number of individual credentials.

*(This approach leaves LITTLE OR NO INFLUENCE on job success)*
AV Skillsets

Basic Computer Skills: USB File Transfer Basic Computer Skills: Client/Server Basic Computer Skills: Spreadsheets Basic Computer Skills: Word processor Basic Computer Skills: Presentations Basic Computer Skills: Email Program Basic Computer Skills: cloud-based data storage and updating Quality recordkeeping - timekeeping


Copyright © 2015 The Association for Quality in Audio Visual Technology, Inc.

It Takes a TEAM!

- No one individual can hold all the expertise required
- The job demands BOTH Leadership AND Management
The Costs of Poor Quality

• Clarifying the functions of the system when the installed system does not function as you had intended
• Detecting and identifying punch list items (list of defects)
• Communicating the defects to the vendor (enter both verbal and written documentation time)
• Re-testing to confirm that the defect was properly corrected (and re-test, for the cases when the corrective actions were unsuccessful.)
• Hours spent by enterprise personnel because the installer would not, or could not, make the corrective actions themselves
• Hours spent due to inaccuracies in billing and administrative issues
• Extra hours were spent with the designer, when the defects involved were due to inaccurate design calculations, improperly selected items of equipment, missing items from the equipment list, etc.? Include time spent needed to research and furnish solutions yourself.
• ...the list goes on!

COPQ Calculators

• “Cost of Poor Quality” (COPQ) is defined as the extra costs expended compared to those expended if there were no defects
• Two currently available:
  – Technology Managers
  – AV Companies
• Spreadsheet Example
If you are doing things the same way you’ve done them three years ago...

Your processes are at least suspect!

US Automakers 1980’s

• Big Three in trouble
  – Japanese cars were built better, and less costly
  – Pushed for legislature to limit imports, but now everyone agrees the problem was MANAGEMENT

• Deming’s role, and his response

• Creation of the de facto standard QC9000
Other Industries

– Automotive:
  • Quality Standard (de facto): QC9000
  • Quality org: AIAG (Automotive Industry Action Group)
  • Industry Assn: Alliance of Automotive Manufacturers

– Aerospace:
  • Quality Standard: AS9100
  • Quality org: IAQG (Aerospace Quality Group)
  • Industry Assn: Aerospace Industry Association

– Telecommunications:
  • Quality Standard: TL9000
  • Quality org: QuEST (Quality Excellence Suppliers of Telecommunications)
  • Industry Assn: TIA (Telecommunications Industry Association)

In Every Example...

• Written as industry-specific modifiers to the auditable, internationally recognized (174 countries) Standard for Quality Management Systems: ISO9000
AV Industry

• Quality Standard: AV9000
• Quality Assoc: AQAV (The Association for Quality in Audio Visual Technology, Inc.
• Industry Assn: InfoComm

Coordination of efforts still in formation after four years

What is Quality?

• Simply put, it means giving the customer precisely what is expected: exactly and completely what was ordered, on time, with NO DEFECTS
• It DOES NOT MEAN glitter, luxury, or most expensive
• In the final analysis, only the Customer can define the quality of what was received
What is a Quality Management System?

• An organized system of procedures, that everyone in the company follows, assuring that the customer receives everything and exactly what was ordered, on time, with no defects.

• It is focused on the customer

• It provides for continual improvement

Management

• Purchase Management
• Production Management
• IT Management
• Marketing Management
• Sales Management
• Financial Management
• General Management
• Operations Management

What about Quality Management?
Sr Management’s Responsibility

• **Commitment** to Quality
  – Communicating the importance of meeting customer as well as statutory and regulatory requirements
  – Establishing a quality policy
  – Establish quality objectives
  – Providing the availability of resources (competence, training, awareness, infrastructure, work environment)

MOST AV Companies today...

• Have no one accountable for Quality Management
• Do not “Stage” the system in the shop before shipping
• Think “Quality” is an unnecessary “cost”
• Have little or no training on Quality or Quality Management Systems
• Therefore, have no processes in place to assure “zero defects”
Benefits to Vendor

- Dramatic increase in profits
- Better cash flow
- Higher capacity with same staff
- Dramatic decrease in “fire-fighting” and “blame setting”
- Better client relationships
- Higher employee morale and retention
- Clients become your sales force

The GOAL!!!!

The Business Case for Quality

Deming’s Quality Chain Reaction
The Crossroads

Adapts ISO9000 for the AV Industry by
• Providing the Metrics for AV Quality Control
• Providing the Metrics for AV Quality Assurance
• Providing the Mechanism for Continual Improvement
• Focuses the AV Company’s efforts on the requirements of the Buyer

“ISO9000 is very general, and not industry specific at all. It is possible for an ISO9000 company to make cement life jackets.”
AQAV is for The USER

- The AV 9000 battery of tests focus not on the technology, but on the USER
- The User is defined as “The individuals who present, are presented to, or conference with the integrated AV technology in a facility”

How Can AV9000 Help?

- Metrics for AV design and implementation, with checklists at every key milestone of a project’s development
- Creates an auditable standard, intended to bring about continual improvement
- Similar to what is found in automotive, aerospace, and telecommunications industries
AV9000

• This Standard provides the metrics for the completion of each milestone, besides completion.
• Getting the AV system “product” to that stage will depend on the company, the company’s customers, the team’s individual experience education and chemistry
• Establishing defined procedures is Management’s role, to be attained through the team itself

“How?”

• Create a Standard that defines “Done-Done” using a Checklist to do so
• Each “test” on the Checklist must be chosen to make sure ALL defects are caught, but in an efficient and economic manner, concentrating on the integration (not the manufacturing, or the architectural) processes
Traditional Quality Control

"Lower-case ‘q’"

Improved Quality Assurance

“Quality with a capital ‘Q’…It’s all about the SYSTEMATIC PROCESS!”

"IT STARTS AND ENDS WITH THE SALES AGREEMENT!!!"

33

34
AV9000 (see handout)

- Product, practices, performances
- EDID Plan
- Gain Structure
  - Nothing heard if nothing is intended to be heard
  - No distortion detected at “peaking level”
- Audio issues that are not that evident
- Labeling inconsistencies
Continual Improvement

- When the CQD’s and CQT’s review the defects found in their audit reports with the team that produced the work, the team learns how to avoid the defects on the next system they produce.

Objections to the Checklist

- Laziness
- Defensive egos
Objections

- Overestimated competence
- We’ve always done it this way “We’re professionals – who needs checklists?”
- Strong increases in revenue hides many ills

“Well, that wasn’t as bad as I thought.”
AV9000 is NOT...

• It is NOT a “how-to”
• The checklists are intended to economically identify ALL the defects BEFORE the Buyer does, and over time prevent them from being there in the first place

Results?

• “We got rid of the ‘dog groomers’”
• “Jobs were place into production faster... from two months or not at all down to a day or two”
• “Hidden costs dropped dramatically”
• “We were able to see the real cause of other problems due to other services”
Results?

- Company “A” – “The job was over faster, and the team had a better attitude”.
- Company “B” – “We were able to drop our prices because our costs dropped so much”.
- Company “C” – “We no longer have to park a truck outside the installation site for two months after the install date to handle the punch lists”

Results

Improving the Vendor Pool helps everyone

(last year’s CCUMC event)

Together, YOU can change the industry by “Leading with Quality”
Step By Step Approach to Zero defects – Step 1

*Lead with Quality* by adopting the **AV 9000 Standard** as your minimum QA (quality assurance) language in your RFP’s. This may mean abandoning the meaningless QA language typically found in the designers “boilerplates” that obfuscate what the vendor will be expected to do. The RFP’s will include a copy of all the Staging and Commissioning Tests, so that the vendor will fully understand what is expected. Suggested language is available upon request.

Step 2 – The RFP

- Pre-bid meetings
- Clear, concise, complete narrative – as *objective* as possible to verify
- Explain what is expected to vendors – no surprises
  - QA is now real and will be verified: product practice and performance
  - Retests, if required, will come out or retainer
  - Discipline!
- Insist on trained certified installers
Step 3

• If the Buyer does not have trained technicians, with specialized training and test instrumentation, enlist a third party to verify compliance of the system to the AV9000 Standard. AV Companies inevitably perform better when they know their systems will be audited by a reputable third party.

Step 4

Apply the discipline to enforce the rules. Accept no excuses. Lead by example. Some vendors will learn best when they learn the hard way; they need to be dragged screaming and kicking to better profits and customer satisfaction. If possible, attend the Staging tests at the vendor’s shop.
AV9000 Compliance

Not only personnel with individual skills, but a company is audited for compliance to the Standard as a TEAM

– 6 systems with Staging and Commissioning Reports
– Systems have Letters of Acceptance
– Evidence of field instrumentation
– Affirmation that ALL systems furnished
– Surveillance audit video conference

Until there are more ...

• Indicate that “special consideration will be given to those who can prove AV9000 Compliance, and have CQD and CQT trained personnel completing the audit affidavits”
• Usually allows Buyer to choose other than the lowest price, because the goal is to chose the lowest qualified bidder
2015 Revisions

- Expanded Commissioning tests on the videoconferencing cameras to inspect scene format, lighting, and camera vibration independently
- Paragraphs 3.0, 5.0, and 6.0 in Section Two now address a short meeting to precede an audit to improve and coordinate the process
- The Staging and Commissioning Checklists were organized into major sections (Audio, Physical Inspection, etc.)
- All the Checklists in Section Two were rewritten to become consistent “statements” to be verified, rather than action instructions
- Suggested equipment database fields were included in Section One, paragraph 7.5.3.1
- Design Review Test 3.7.17 added the term “seismic” to the previous content.
- “Switching Time” was addressed and added to the Staging and to the Commissioning Checklists in Tests 5.3.15 and 6.3.23, respectively.
- The bend radius inspection tests in the Staging and the Commissioning Checklists we updated to encompass all cable types.
- Section One Paragraph 7.2.3.4 was modified to address issues that may come up if the Customer’s Scope of Work is too ambiguous for the system to be properly verified for quality.
- The Staging and Commissioning Checklists Tests that address the use of the Quantum Data 780 for a “pixel by pixel test” were removed.
- The introduction to Section Two addresses the criteria for a test to be included in the Checklists, and an admonition that the Standard does not address all the tests that an AV Company may need to be able to take.
- Section One Paragraph 6.2.2.1 expands on the requisite certifications for affirming who is qualified to perform the Checklist Tests.
- The list of required test equipment was updated to reflect current technology.

Thank You!

www.aqav.org
(Please fill out the evaluation sheets)
Appendices

- COPQ Spreadsheet
- “Standard Systems Specification” Boilerplate
- Commissioning Kits