

CERTIFICAZIONE DELLE COMPETENZE IN SOFTWARE ENGINEERING



50+ years experience
in SW quality

M. Sogliani - Minsk – May 25[^] 2018



A ..very .. Long career in I.T.

- ❑ From 1959 up to 2018
- ❑ Always in I.T.
- ❑ Very often involved in **SW Quality**
- ❑ Member / Mgr of leading edge technology groups
- ❑ Direct **witness** of new methodologies / techniques and tools
- ❑ Early experiment / adoption / dissemination

- Clerk in a big Bank in Milan
 - Study department
 - Testimonial of migration to a 2nd generation IBM computer
 - Publication of Operational Research studies :
 - Reducing customers' queues at bank counters
 - Minimizing cash quantities at cashier's locations
 - No follow-ons for computing power limitations
 - Decision to leave the Bank (after evening University degree) -> IBM

□ Attendance Courses on 360 computer

- First 3rd generation computer on the market
- SLT (Solid Logic Technology) - more power
- New HW Architecture (CPU , Memory, Channels, Peripherals)
- New Operating System SW Architecture (DOS, MVT)
- New SW families (Compilers, Operational Services, Spooling....-.)
- Standards for all new forthcoming computers
- IBM success and expansion

- On return to Milan → member of Italian Specialist Group

❑ IBM Test Center - 360/30

- Assist customers in testing their applications before installation
- Ensuring stable environment
- Debugging and testing hints support

❑ Edison - 360 / 50

- First Italian customer installation (64K memory - Tapes , Disk drivers)
- Project mgr. -> migration from previous 2[^] generation programs (60+ programmers)
- Many Problems : new technology, new OS (MVT) , new inexperienced people
- New PL1 symbolic language - 1[^] in Europe
 - Structured programming from Algol
 - Alternative to Cobol and Fortran
 - Too futuristic and complex -> multithreading etc.
 - Very limited market acceptance

- ❑ Compiler still unstable → monthly trip to UK Lab
- ❑ Project Delays (customer dissatisfaction)
- ❑ First application converted !!
- ❑ Demo to CIO (from 2 h. to 10+ h. ???)
- ❑ Lessons learned:
 - Testing is a complex ..and endless process
 - Not only Functional **Testing** → **Performance** (Load and stress) testing
 - Programming + operations needed **guidelines** and standards .
- ❑ My first **Book** on PL1 Efficient Programming

□ IBM I.T. Master Class

- 5 months courses on advanced and future technologies
- James Martin's course on « SW Development »
- Introduction of Process concept
- Emphasis on Requirements and Testing
- Needs of Review and Approval events
- Anticipation of «Information Engineering» book
- First draft of a Development Methodologies (Waterfall...)

- Mgr of Italian Specialist Group (2[^] level support)
 - Customer **assistance** on installations, development and delivery
 - Problems' resolution
 - Sales Support → **Benchmarking**

- Benchmarking
 - Computer performances → Customer's Jobstream
 - Compilation + Execution time (**Thruput** index)
 - Programs' **optimisation** (different languages)
 - Execution configuration (Smart scheduling, Increase Parallelism, Overlapping, I/O channel separations, Disk access head minimisation....)

- ❑ **Computing Center EMEA Functional Mgr**
 - Demo, Testing and Service Centers (...primeval SaaS...)
 - 150+ installations , 2000+ people
 - Cost containment
 - NW solutions adoption → RJE
 - 1973 Reduction Target = 125 installations !

- ❑ **Guidelines on Operational Activities**
 - Ensure Environment **stability, performances and continuity**
 - Separation of roles and responsibilities
 - Publication and enforcing **Guidelines**
 - **Configuration Mgmt , Change Mgmt , Release Mgmt, Availability Mgmt etc.** → ITIL, ISO20000
 - Local **Inspections**

□ Director of South Italy Support Group

- Specialists on new technologies, methodologies and techniques
- 2[^] level support to Customers
- Leaders of problematic, **risky projects**

□ I.N.P.S. Project

- **Largest** IBM installation in Italy (win from competition)
- 4 large CPU's and 100+ distributed systems
- 150+ IBMers (Programming, Testing, Release, Operation...)
- Big challenges on.... all **SW Quality** aspects
- Experiment and adoption: **Dev. Process cycle, Test Factory, Release policy**
- Ad-hoc IBM **SW distribution** package (-→ Rome Lab. → Wizard)

- ❑ Director of Intermediate System w/w Center
 - 150+ specialists from all w/w countries
 - 3[^] level support
 - Sales support
 - Technical assistance
 - Demo Center (daily IBM Euroflights)
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- ❑ 3 Tier Architecture launch
 - Central host -> departmental servers -> PC's
 - 3 Sync. Operating Systems (MVS, OS400, OS2)
 - Feasibility of distributed operations (vs. HP, DEC, Microsoft competition)
 - Experiment of first middleware --> Websphere

- ❑ Montecarlo's Future Technologies Events

□ Director of Italian **Risky** Projects

- Selected Senior Project Leaders (25+)
- **Project Management** techniques and tools adopted.
- Project periodical **reviews**

□ Autostrade Project (Florence)

- Winback from competition (Univac)
- Conversion of Highways Payment System (automated gates)
- **First** Relational (**DB2**) installation in Italy.
- Integration of multiple data files
- New DB design techniques (**Data Flow**)
- Necessity of **DB manager** and **Data Manager**

- Director of Devs – Ops Competence Center
 - 75+ specialists (segmentation of skills)
 - Products, Methodologies, Tools
 - **Guidelines** to IBM internal Depts (Inf.System + Labs + Plants)
 - Product Marketing Support (Announcement – Sales)
 - **Consultancies** on product utilization
 - Customers' projects management on **Dev. Methodologies**
 - **Growing** interest on **SW Quality**
 - Partnership with independent tool suppliers

- ❑ Several **early** experiments -> adoption + .. failures
 - 1988 Early **CMM** Assessment (Watts Humphrey -> SEI Dept. Defense) «*Managing the Software Process*» Book.
 - **Function Points** estimation (A. Albrecht)
 - Modeling, DFD , ERD generation tools (external supplier sponsorship)
 - **Repository** of development (-> ICT) artifacts (fail !!!)
 - Capture/Replay tool prototype for stress/load testing (fail !)
 - **Inspections** → Peer-to-peer reviews (fail !)
 - Static code analysis (index cyclomatic complexity)
 - **Object Oriented** (Smalltalk , C++) → OOCC mktg launch + support
 - Use cases (Rational Unified Process) → VisualAge
 - **ISO9001** Certification (2^ IT in Italy)

- ❑ Support vs. **Certifications** (Initial + maintenance)
 - Auditor
 - Support certifications (70+ ICT companies)
 - ISO9000, ISO27000, ISO20000, ISO14000,
 - Italian laws compliance (anti-corruption, transparency, prevention of corporate offenses..)
 - Specialized (electronic mail certified,...).
 - No duplication → Unique “**Integrated Quality System**”
 - Maturity assessments (CMMi...)

- ❑ Quality Organisation membership
 - Italian **SW Quality president**
 - European **SW Quality vice-president**
 - **ISO** working groups
 - Conferences’ Organisation
 - **ISTQB**

- ❑ **Conferences** (transfer of know-how)
 - 1970s - GUIDE (IBM customers)
 - 1980s - IT Quality sponsors
 - 1990s - Quality Organisations
 - 2000s - STQB (Italian STF – 10th edition)

- ❑ **Company Management Attitude**
 - 1960s -1970s - Attention only to HW costs (SW Quality ignored)
 - 1980s-1990s - Sensibility to IT opportunities (SW quality neglected)
 - 2000's - Worryng (SW Quality suffered)
 - 2010s - **Awareness** (SW Quality attention + investments)

THANK YOU FOR YOUR ATTENTION

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