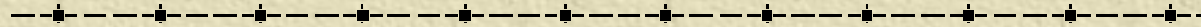
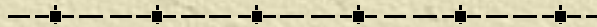


Implementing IT Processes
in
BMO Capital Markets under the SEI CMM/CMMI
framework



Alfred Allik
Head of Quality Assurance
IT Best Practices and QA



April, 2008

Agenda

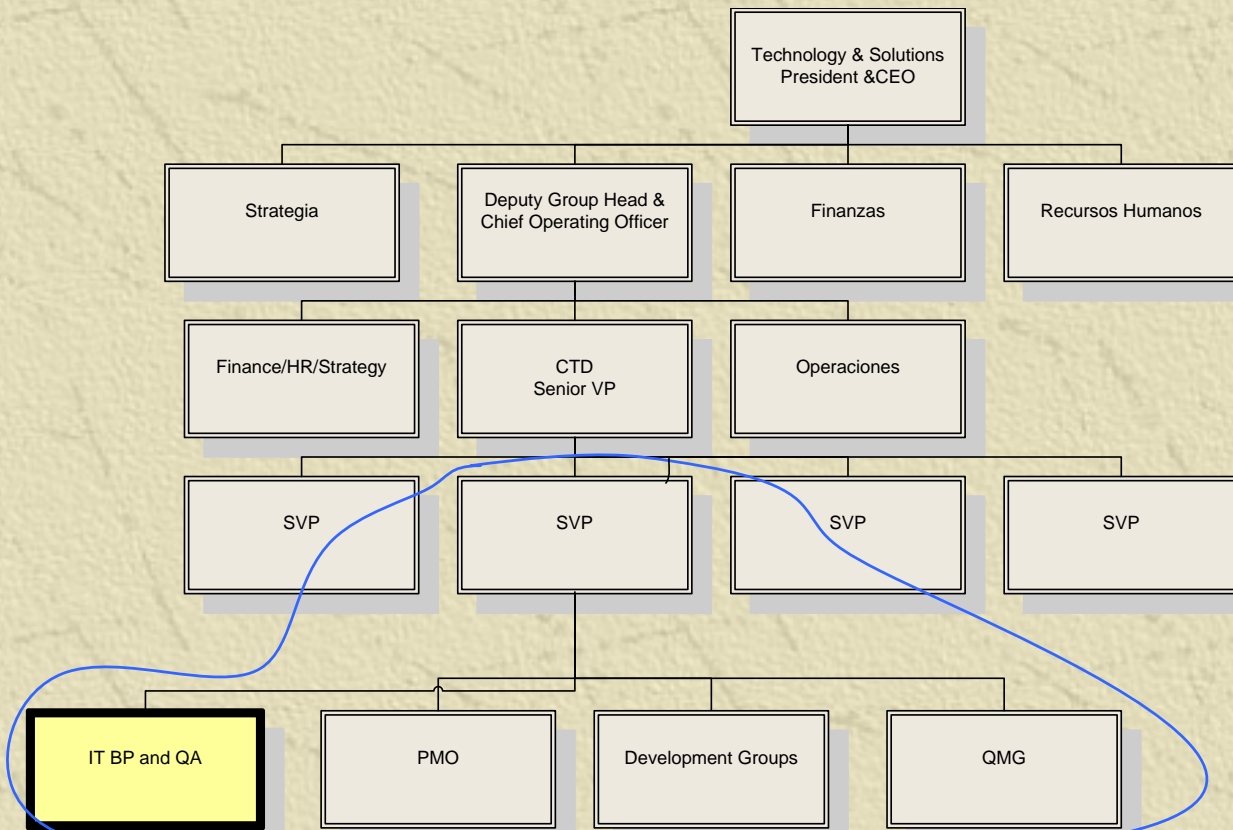
-
- ✦ Bank of Montreal
 - ✦ Achievements
 - ✦ Critical Success Factors
 - ✦ Role of the ITBP &QA in the SEPGs
 - ✦ Summary
 - ✦ Appendix

Bank of Montreal

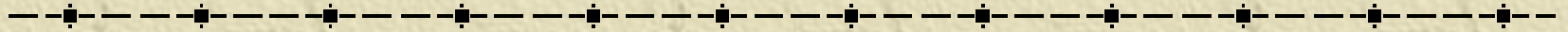
-
- ✦ Founded in 1812
 - ✦ Head office in Toronto
 - ✦ More than 33.000 employees in Canada, USA, Great Britain, China
 - ✦ Owners of Harris Bank in Chicago
 - ✦ The IT development and support and back office groups has more than 6,000 people and is independent from the business side
 - ✦ The IT development and support group is separated from the production support group

Bank of Montreal

Cont..



Achievements



CMM L2: Nov 2000

CMM L3: May 2002

CMM L4: Nov 2004

CMMI L4 version 1.1: Oct 2006

We were the first Financial Institution in Canada to reach CMMI Level 4.

Critical Success Factors

-
1. Sponsorship
 2. Software Engineering Process Groups (SEPG)
 3. IT Best Practices & QA (ITBP&QA)
 4. Training
 5. SCAMPIs C, B and A
 6. Selecting an assessor

Critical Success Factor #1

Sponsorship

The Executive Sponsor in charge should

- ◆ Visibly supports the process improvement initiatives
- ◆ Provides resources
- ◆ Reads and acts upon reports generated by the BPQA group
- ◆ Be advocate and passionate about process improvement
- ◆ Participate in the celebration of successes
- ◆ **And overall she/he must be truly convinced about the value of this model**

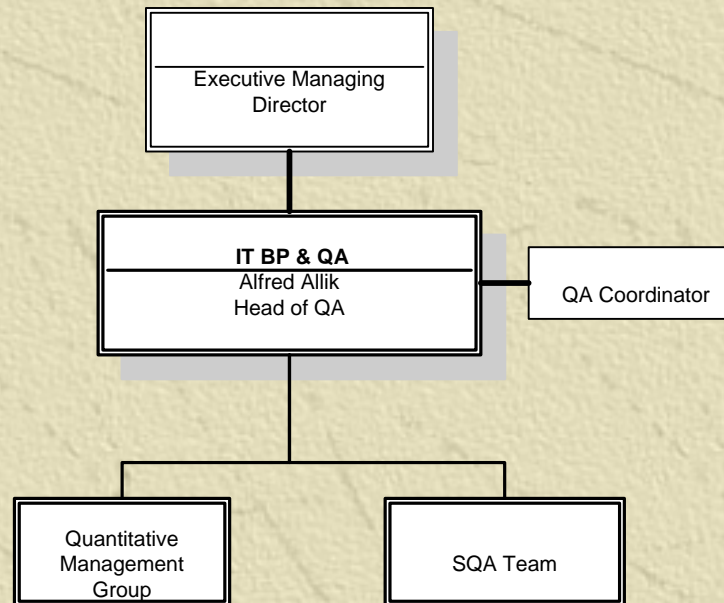
Critical Success Factor # 2 –

Software Engineering Process Groups (SEPG)

-
- ✦ Strong SEPGs
 - ◆ Chaired by senior managers, with representatives from all areas
 - ✦ Processes are owned and developed by the SEPGs
 - ◆ Process action teams (PAT) or Technical Working Groups (TWG) are created for specific initiatives
 - E.g. Peer Reviews process
 - ◆ An initial draft of the process is proposed
 - ◆ After reviews have occurred the processes are approved
 - ◆ Training
 - ✦ Process improvement plans and activities are approved by them
 - ✦ They analyze the BPQA reports and act upon them when necessary
 - ✦ Very strong leverage between SEPGs
- “They are the owners of their own destiny”**

Critical Success Factor # 3 – Strong ITBP&QA

Quality Office Structure



Critical Success Factor #4 – Training

-
- All FTEs took a 3 day SEI CMM/CMMI course.
 - Town Halls given by Executive Sponsor
 - Lunch and Learn
 - Coaching by BPQA and SEPG members
 - Internal bulletins/intranet

Critical Success Factor #5 – SCAMPIs C, B y A

-
- ◆ Pre-assessment were conducted by the external assessor as a sanity check a couple of months before the assessment
 - ◆ Weaknesses found in pre assessments were addressed
 - ◆ Pre-assessments assisted the external assessor to understand our organizations
 - ◆ Having a strong project management team and processes helps a lot
 - ◆ Start with one Process Area at the time
 - ◆ Perform a SCAMPI C at the beginning – where are you
 - ◆ When you think you are ready perform a SCAMPI B (6 months before SCAMPI A) – the finding will be used in the SCAMPI A
 - ◆ Fix the weaknesses
 - ◆ **Very important , ask the assessor to perform a “readiness review” a month before readiness review” – To avoid surprises**

Critical Success Factor #6 – Selecting an assessor

✦ Choose an Assessor from the very beginning

✦ This will help a lot since he/she :

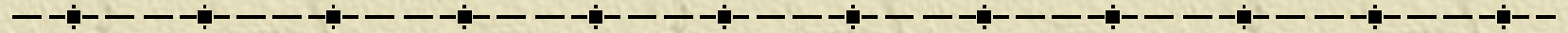
- will understand the organization
- will assist in the interpretation and implementation of the model
- can assist with the training program

Role of the ITBP & QA in the SEPGs

-
- ✦ Participates in the review and approval process for Process Improvement Initiatives
 - ✦ Assist in the understanding and interpretation of the SEI CMMI (subject matter experts)
 - ✦ Participate in the creation of the Process Improvement Plans
 - ✦ Perform Independent Verification and Validation in **all** Software development projects (**institutionalization**) – Combing them with ISO Internal Audits
 - ✦ Creation of reports
 - ✦ Identify and report SEPG activities or inactivities that could potentially jeopardize the maturity levels achieved
 - ✦ Manage the Quantitative Management Group (See Appendix for details)
 - ✦ Upon request:
 - Write/update Policies and Processes on behalf of the SEPG
 - Custodian of the Policies and Processes
 - Participate in Process Action Teams
 - Organizing training

Role of the ITBP & QA in the SEPGs

(cont'd)



- ✦ Does not own the policies and processes
- ✦ Does not perform Software Testing

Summary

-
- ✦ Strong Executive support
 - ✦ Dedicated IT BP&QA group
 - Independent
 - Fully staffed
 - Stable
 - ✦ Strong Software Engineering Process Group (SEPG)
 - ✦ Training
 - ✦ SCAMPI C, B and A
 - ✦ Choose an Assessor from the beginning
 - ✦ Start small



Appendix

Quantitative Management Group

Quantitative Management Group

✦ Roles and Responsibilities

- ◆ Define measurement goals based on organizational business goals
- ◆ Create list of common measures (with operational definitions) for the use of project quantitative goals
- ◆ Collect and analyze measurements at the organizational level using Statistical Process Control techniques
- ◆ Provide Measurement Program training
- ◆ Coach and train project teams on measurement collection and analysis
- ◆ Use projects measurements to update organizational baselines and recommend improvements to organizational processes
- ◆ Report on measurement trends and organizational baselines

✦ The Functional Sizing & Estimation team supports the organization with processes and reporting of

- ◆ function point analysis for delivery, application and portfolio size
- ◆ estimation methods (SEER – SEM) and models based on functional size
- ◆ centralized application information data store