Continuous Improvement with help of Data Analytics, the LeidenUniv business case

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Implementation- and change manager

Manager Financial Shared Service Centre

Presenter & coach
The more we discover, the more we know there is to discover.
Timeline and ambition

2009
- Establish SSC and implement processes

2012
- Innovate in user experience

2014
- More in control

2020
- Vision 2020
- University Leiden Digital

“WE HAVE A ‘STRATEGIC PLAN.’ IT’S CALLED DOING THINGS.” — Herb Kelleher
Where do we come from?
Fast close principles

Fast close is the reward for a well structured and organized finance organization

The result of fast close is a fast, accurate and reliable report process (at lower costs)

- Describe processes
- Segregation of duties (systems and processes)
- Create ownership
- Reliable report process
- Create work instructions
- Well-structured meetings
- Input for FSSC product catalogue
- Periodic evaluation with accountant of decentralised departments
Digital, structuring & harmonize

From paper to digital
- Bank processing
- E-invoicing
- E-debtor management
- Purchase invoices
- Salary processing

Structuring
- Equipped workflows
  - Purchase invoices
  - Declarations personnel
  - Journal entries

Harmonize
- Period closing
  - Month
  - Quarter
  - Year
Closing process: where are we now?

**Implemented Smart Close procedures**
- Scenario: all checks well described and organized

**Monthly maintenance & release of tasklists**

**Execute**
- Execute checks
- Digital documentation
- Audit trail
- Personal task list

**Monitor Processes**
- Status dashboard: Monitor if checks are executed

**Audit and optimized record process**

- Based on ‘Exception principal’: focus on real risk and issues

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- Based on ‘Exception principal’: focus on real risk and issues
Big data analytics and other developments: (even) more control
Continuous Monitoring: how did it start?

FSSC: Optimal customer centric service!
- Process optimization
- Continuous monitoring and Runbook
- Declaration system and current guidelines
- Employee knowledge
- Scorecard
- ESS and mobility
- Lean six sigma

Inspiration

Co-innovation

Visualization
Testing ground framework

ROULLOUT
Expansion within the finance function and to other functions

PILOT CCM
First experience with continuous control monitoring of top 10 risks

READINESS ASSESSMENT / BUSINESS CASE
To determine the scope of a first CM pilot and the impact of CM on the current culture, technology, organization and processes
Continuous Monitoring: Pilot

Scope:

Risks in the purchase-to-pay (p2p) process

Top 10 controls phase 1 (pilot):

1) Inconsistent use of VAT codes
2) Safeguard segregation of duties based on SAP transactions
3) Ensure there are no double master data entries
4) Compliance and public (EU) tenders
5) Monitor for double payments/invoices
6) Safeguard coding of hiring temporary staff
7) Ensure correct use of expense allowance scheme, general ledger account
8) Monitoring of authorization approvals (guidelines on substitution)
9) Monitoring of (unauthorized) orders (incl. 3 way match)
10) Ensure proper use of general ledger accounts
Implemented controls after pilot

1. Duplicate invoices
2. Duplicate ‘fuzzy’ invoices
3. Violation of segregation of duties in master data record
4. Expired outgoing invoices
5. Incoming invoices in workflow older than 10 days
6. VAT checks (inconsequent combinations of records)
7. Violation segregation of duties in workflow
8. Zero balance checks on General Ledger
9. Infringement on password use
10. Human Capital: conflicts of interest (ancillary activities)
11. Infringement segregation of duties in SAP-roles
12. Monitor thresholds public (EU) tender
Continuous Monitoring
By checking all relevant data (semi) continuously, CM contributes to compliance of internal and external goals and structural improvement.

1. Improve compliance external goals
   - Perform (semi)continuous checks
   - Reduction of implementation and maintenance costs

2. Improve compliance with internal goals
   - Integrated monitoring (total mass)
   - Procurement
   - Horizontal supervision
   - Performance agreements

3. Optimize processes
   - Not only solving incidents but focusing on systemic and structural improvements
   - Performance optimization and achievement of the organizational strategy

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Continuous Monitoring platform

Data-analytics
• Duplicates
• Completeness of data
• Process analytics

Text mining
• Check for certain key words

Anomaly detection
• Compare travel and expense transactions with other transactions

User profiling
• Determine the behaviour of end-users by measuring the quality of travel and expense transactions

Reduction of errors / exceptions

Payroll Checker

Business

Signal list
Exceptions

Correct errors
Analyse errors
Optimize

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FSSC organization
Before Continuous Monitoring implementation

Key processes

1. Purchase to pay
2. Order to cash
3. Payroll
4. Record to report
5. Cash & bank management

Teams

Accounts Payable
Accounts Receivable
Payroll
Balance Sheet (GL) Consolidation
Cash and resources
FSSC organization
After Continuous Monitoring implementation

Key processes
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Teams
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- Balance Sheet (GL) Consolidation
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Continuous Monitoring team
Continuous Monitoring: end-to-end process

SAP (finance and procurement) - (Semi)real-time data acquisition

CM platform (built in Python) requests data from several sources. Applies:
- Preprocessing
- Data analysis
- Machine learning

All controls defined in Runbook

The CM platform analyses data and audit the actions that follow

Transactionel data forms the basis of reports, Root causes and further steps

Mobile access ensures follow up on exceptions

Results go back to Runbook

Runbook Controls

Workflows / list of tasks

FSSC

Determine if controls are picked up by business

Data on internet

Local data

Datalake

Transfer to business

Manage transactions

Organization

Process

Innovation

Information Technology

People
Lessons learned

How does it affect the team?
• Gives you data to influence stakeholders
• With data you will be a proactive business partner
• Your team becomes really engaged in clearing exceptions
• It creates lots of ownership in teams

The results make it worthwhile
• Zero duplicate payments since analytics introduced
• Extra drive for continuous process improvement
• Our thinking around controls have changed, we now build analytics into new projects
• More demonstrable ‘in control’ (also for external accountability)

“Just do it!”

It’s not all easy sailing
• At the start it creates more workload for the teams
• You need to establish good governance around changes
• You need technical and analytical resources
• It takes time to embed

Considerations for your business case
• Control is more effective and timely
• Reducing costs? At the start cost of control will rise
• Improved audit focus and efficiency
• Start small and grow with a lot of energy and perseverance

Lessons learned from implementing Continuous Monitoring
Big Data: Maturity levels

1. The data describes what the current state is
2. Conclusions are made based on data
3. Data is translated to trends and predictions
4. Data is translated to advise for the business

Source: Gartner
Vision 2020
The flywheel effect

- Vision 2020
- Results
- Flywheel effect (FI / Human Capital / IT)
- Continuous improvement
- Improved services/ in control
- Concretization of vision

Continuous Monitoring in time...

... what's next?
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