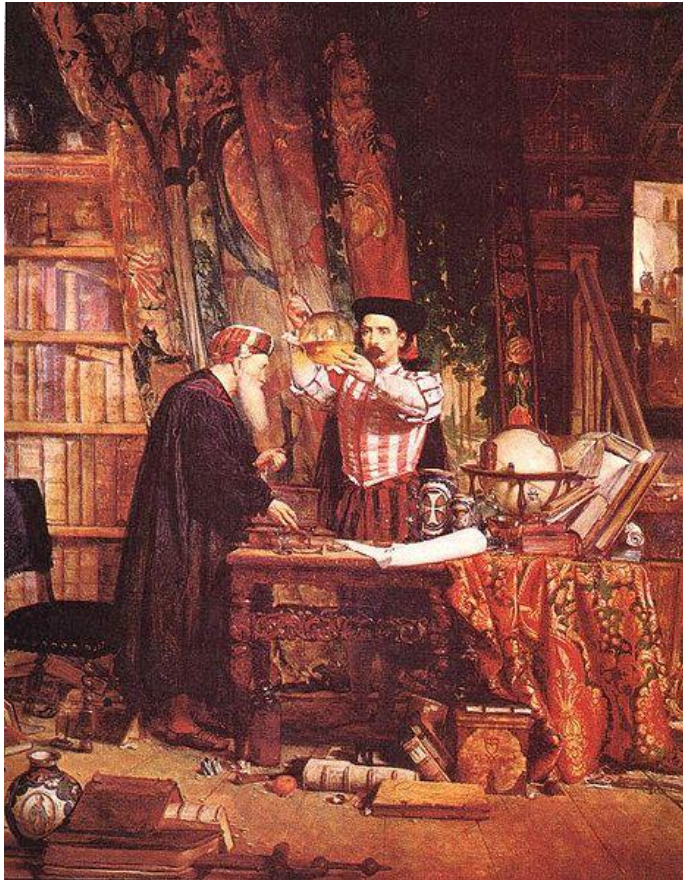

What is Commercial Metering?

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Landis+Gyr

- + Headquarter located in Zug, Switzerland
- + Since more than 120 Years active in the Metering Device Business
- + Since more than 30 Years active in the metering Solution Business
- + Active on all five Continents in the world
- + 5000 employees, 1 billion US\$ Turnover

Commercial Metering: Transmuting Meter Data into Financial Data?



Like ancient Alchemists were transmuting common Metals into Gold Commercial Metering is transmuting Meter Data into Financial Data.

There are two Differences:

1. Alchemists has not been successfully executed this procedure.
Commercial Metering is doing this every day!
2. Meter Data are Financial Data and have to be handled in the same way like we handle Financial Data!

Definition “Commercial Metering”

Commercial Metering is the whole process to collect data about the energy consumption behavior of customers to enable the utilities to bill the customer. These “metering data” contains:

- Master Data
 - Customer, Devices, Location, Metering Point, Tariff Agreement
- Billing Data
 - Aggregated Data or Register Counters per Time Period (Month) per Tariff
- Load Profile Data
 - Aggregated Data or Register Counters per Time Period (30 minutes) with Data Quality Information
- Spontaneous Events
 - Manipulation of the Device like Cover Removal, Magnet Influence
 - Connect or Disconnect
 - Quality of Supply
 - Others (Shift of Summer Time to Winter time, ...)

Commercial Metering: Integrity of Meter to Cash Process

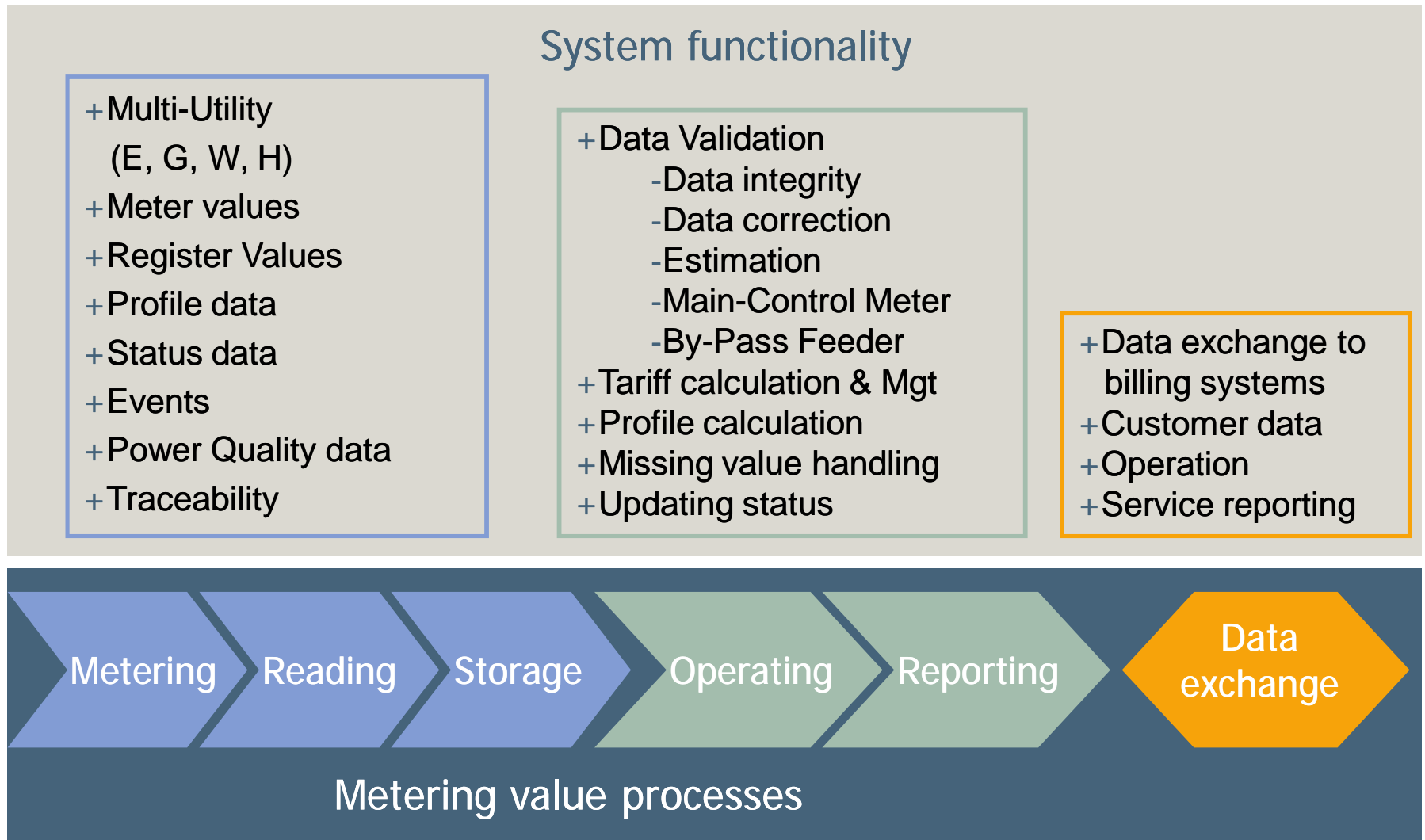
Changes has to be reproducible, traceable, correct and the same in all parts of the Meter to Cash Process:

- in the meter
- in the different sections in the meter system
- in the billing system
- in other systems like forecasting, marketing and ERP systems.

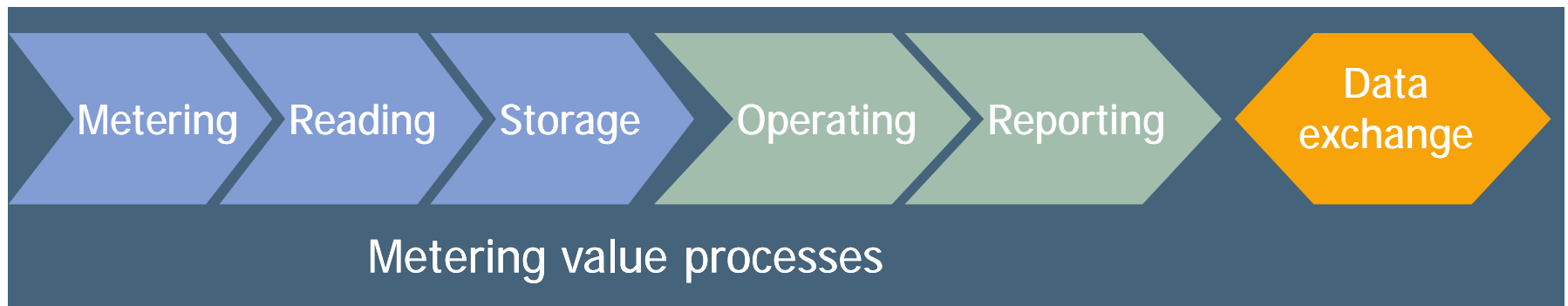
Since the collapse of ENRON in the US this this central requirement has to be fulfilled by all NY stock exchange listed companies.

See http://en.wikipedia.org/wiki/Sarbanes-Oxley_Act

Metering Value Chain – The Meter-To-Cash Process



Overview of AMM Solutions



Commercial Billing: Big Challenges Today

More Meter Protocols from several Meter manufactures has to be supported

Communication Technology is changing faster than Meter Technology:

Implement new Communication without touching the Meter Devices and without changing anything in the Meter To Cash Process.

As the Energy Market get liberalized we are facing new functionality: More Flexible systems are required and the export to third party systems has to be more sophisticated.

Example: Second World War and Vacation in Spain

As modern AMM systems have million of meter points the automation of the whole process has to be enhanced. Manual work is no option! Unplanned Downtime is not possible anymore.

Commercial Metering: Outlook to the future

We see the following tendencies:

- + Amount of Meter Data is increasing:
we measure electricity, gas, heat and water consumption
- + Commercial Meter Data is not used for Billing purpose in future, but also for controlling customer energy consumption behavior and network control.
- + Data will be acquired, processed and exported immediately after its generation.
- + Professionalism of Meter Data System will increase
- the time for home made solutions is over!

Thank You for your attention

