Analytics for IoT

Usecase Inspiration

Gartner says 70% of organizations will shift their focus from big to 'small-and-wide' data

by 2025

Inspiration only!

Please do not see this the .pdf file as the full description of what's possible with Analytics for IoT – it's not! Content is simplified stories, that tries to **bridge Tech and Business**, to inspire.

This is a **living document**, that over time will grow. So purpose is solely meant as **'early inspiration'**, touching only on a small number of the **enormous number of potential use cases**, where predictive data can support your business in becoming a Smarter Business.

So please come back from time to time, and see if new version is here, with new inspiration.
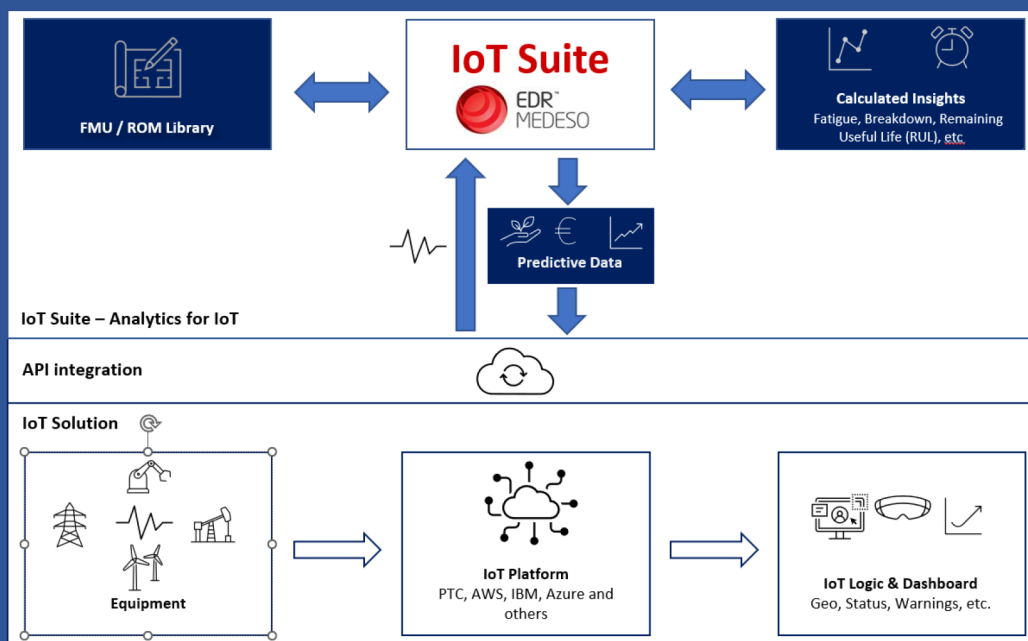
Use Case #1: Electrical Motors

Elevator Company *LiftMeUp* deliver residential, commercial, and industrial elevator systems all over the world.

Based on customer feedback, **new service and maintenance offerings needs to be developed**, with the goal to deliver '**Lift-as-a-Service- (LaaS)**

- Before launching any new service, **historic data is run through Analytics for IoT**, to evaluate how current service scheme, matches the actual need for service.

- Based on findings, *LiftMeUp* are now able to **calculate actual cost of doing Predictive Maintenance** in the future, and thereby have basics in place for full Business Case to start as LaaS Business Model

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- By using already available (or easy to retrofit) sensors and live data, Analytics for IoT can **calculate Remaining Useful Lifetime (RUL)** for critical components such as the central motor(s)

- This is done by uploading a *Digital Representation* (**existing design models**) to Analytics for IoT of the different motor models used.

- Then based on live usage (sensor IoT data) relevant **Damage Calculations** will run, and deliver RUL-information back

Business value of Analytics for IoT

- Deliver the needed data to calculate cost, and **secure transformation into a 'Lift-a-Service'** business model, giving customers the option to choose between **CAPEX** or **OPEX** for delivery of elevators

- Deep insight on the usage of all installed elevators, **including predictive information**, making planning of needed service/Maintenance precise and efficient

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT - Resource Center**: LINK)

- Generator (Motor) module

- Bearing

- Bayesian Statistic

Use Case #2: Gear

Concrete company *SolidGround* are using numerous gearboxes to deliver enough power to drive crushers, conveyers, rotary own etc.

- Unplanned downtime costs *SolidGround* millions of dollars each year – plus delayed deliveries that lead to **lower Customer Satisfaction**

- So, they are looking for a solution to identify issues early and **prevent unwanted downtime**

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- Analytics for IoTs *Gearbox* feature will detect early stages of wear and tear, so that maintenance can be planned

- *Axels* and *Bearings features* will also deliver Remaining Useful Life (RUL) on other parts of the factory

Business Value of Analytics for IoT

- Predicting and **better planning of needed maintenance** improves customer satisfaction with better just in time delivery

- Together with higher customer satisfaction, **cost of maintenance goes down**, and earnings go up

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT – Resource Center**: LINK)

- Gear

- Axel

- Bearing

Use Case #3: Weld fatigue

CraneCorp is a manufacturer of **heavy equipment** for the cargo and construction industry

- The need to modernize their customer offering through a set of Digital Services – focus is *Security* and *Predictive Maintenance*

- Goal is to *monitor usage* of equipment, being able to provide *proactive information* for planning service – and avoiding breakdown – as well as *increasing security* by sharing information when equipment is being overloaded with risk of fatal accidents

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- Several **stress points** and areas most often seen as **root cause** are identified, a few sensors mounted, and IoT data pushed to into Analytics for IoT

- Analytics for IoT will now be able to **deliver Remaining Useful Lifetime** (RUL) information on selected welding, bearings, and axels when requested to do a **Damage Calculation**

- This information can now be used to provide warnings if equipment is used beyond recommendation
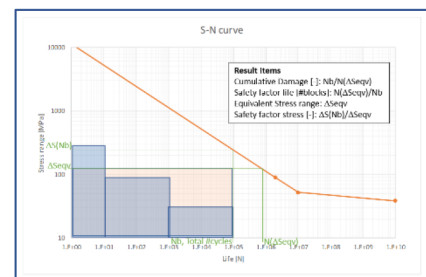
Business Value of Analytics for IoT

- *CraneCorp* can start providing *Digital Services*, that not only are relevant for Customers - getting planned services rather than unplanned breakdown maintenance – but also provide *higher worker safety.*

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT – Resource Center**: LINK)

- Fatigue

- Bearing

- Shaft/Axel

Use Case #4: Bearing

MegaPump Corporation is investigating the possibility to move into a **Cubic meters-as-a-Service** (m3aaS) delivery model - moving away from the traditional price per pump business

- Before launching the service globally, Analytics for IoT is used in *testbench scenarios*, to tune forecasting, and make sure business case is solid

- When new service is implemented, Analytics for IoT will be used for **optimal planning of service maintenance**

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- Bearings failure is one of **the most common mechanical failures** seen on pumps.

- Existing sensors already designed into the *pumps deliver data to Analytics for IoT*, that is then run through the *Model Agnostic* feature (see link below, to read more)

- Output is then used to drive the *Roller Bearings* standard feature in Analytics for IoT, to deliver predictions of Remaining Useful Life (RUL)

Business Value of Analytics for IoT

- Having Predictive Data from *Connected Assets* delivering IoT Data from on-board sensors, will enable a *whole new business model*

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT - Resource Center**: LINK)

- Model Agnostic

- Bearing

- Bayesian Statistic

Use Case #5: Shaft/Axel

ShipEngines Inc want to look into their current service requirements as well as their overall *Service/Maintenance Business*. Purpose is twofold:

- Evaluate if *Service Requirements* are too high, and

- Evaluate if *new Business Models* for service and maintenance could be developed.

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- Through a combination of *retrofit of sensors* to existing drivelines, and including sensors in future designs, *data will start flowing* into Analytics for IoT

- In Analytics for IoT a combination of the *Model Agnostic* feature will be used to generate *Virtual Sensor Data*, (data delivered from models being run, so calculated values through simulation) that then will be fed into the *Shaft/Axel .twin file* run by Analytics for IoT and then finally the *Roller Bearing* standard features is used to generate predictive data about the Remaining Useful Life (RUL) for both *single parts as well as sub-systems*

Business Value of Analytics for IoT

- With access to *Model Based Predictive Data* *ShipEngines Inc.* now can evaluate if they should *adjust Service and Maintenance recommendations* and requirements

- At the same time, they can *evaluate* if they can move into *new ways* of selling Service and Maintenance

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT – Resource Center**: [LINK)](#)

- Model Agnostic

- Shaft/Axel

- Roller Bearing

- Gear

- Bayesian Statistic

Use Case #6: Sustainability

BigWeldings Inc is manufacturing **large, welded steel structures**.

- All steel structures sold, are manufactured from *new steel (w. carbon emission footprint from production)* and refurbishing have not been a subject before.

- However, the *growing focus on sustainability* – combined with higher cost of steel – drives the idea, for a *more sustainable approach*, where BigWeldings Inc *want to offer refurbished products* to their customer base.

Examples of value EDR Medeso Analytics for IoT can provide in the use case

- Depending on structure type, either:

    - *Data already present* in control systems, such as hydraulic pressure, workload cycle counter as well as tracked kilo watt/hour, are used as indirect measures, delivering the data, that will be run through the *Model Agnostic* module in Analytics for IoT, to build full data set for each structure, or

    - *Strain Gauge sensors* are introduced to monitor load of the welded steel construction, and *data is logged* for each structure, for later use

- When no longer usable, the **data of each structure** is analyzed to see if it **can be refurbished** (with new bearings, axels etc. and a new coat of paint), or the structure have **started to show Fatigue**, and needs to be scrapped

Business Value of Analytics for IoT

- Logged data for each structure is run through the **Model Agnostic** and **Fatigue** feature in Analytics for IoT, and will show if a structure needs scrapping – or **can be re-furbished**

- **Analytics for IoT is the enabler** for a more **Sustainable business** model for *BigWeldings Inc*

Analytics for IoT standard features utilized in this case

(Read more about each Analytics for IoT feature, in our 'Feature Set' document that can be downloaded in our **Analytics for IoT - Resource Center**: LINK)

- Model Agnostic

- Fatigue

Analytics for IoT

With the Engineering Technology analytics solutions described here, it is possible to benefit from the great value that is attributed to the maintenance and operational expenditures on the asset throughout its lifecycle.

You will be able to develop, deploy and deliver valuable applications for predictive insights into your high value assets – and do it faster.

You get access to an application requiring low effort, up and running with minimal input. In other words, immediate traction and results from your IOT investment.

Who is this for?

If you answer YES to the questions below, we can help you get up and running within a matter of days

- Are you struggling with getting value out of your IOT investment?
- Are you spending too much time training your machine learning algorithms or collecting data?
- Would you like to get started with predictive insights today?

… then this is for you!

Interested?

We encourage you to reach out if you have any questions about our unique IoT Analytics solutions.

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Also: Check out our **Analytics for IoT – Resource Center**: LINK, where you will find; **Usecases, Feature Description,** and **Live Demo Recordings**