Fact Sheet: Acuvate Business Services

■ Current overview of Acuvate Business Services and first some general points for information:

● We have focused at business driven descriptions. However if you do not recognize your business problem then do contact us since then we can verify whether we have that business problem covered as well.

● In this overview focus at the Energy (Oil & Gas) & Manufacturing verticals.

■ **CATEGORY : PREDICTIVE   MAINTENANCE**

○ **DESCRIPTION**

○ Using Timeseries / ERP data & AI – Machine Learning (ML) based models to predict days in advance that critical components (engines, turbines, compressors, pumps, valves, etc.) are expected to fail. This allows time (for maintenance) to replace the potential failing component before it really breaks down.

○ Of course it will take once off effort to train the model and input is needed from SME (Subject Matter Expert) to get input on equipment behaviour.

○ **BUSINESS VALUE**

○ Increased availability (in %) of the (Oil & Gas / etc.) production platform & less time needed for shutdowns (since we can more focus at components needing maintenance) leading to higher production (i.e. barrels of oil) and therefore increased revenue.

○ Since an business case can be made more easily this is a good AI-ML application to start with.

■ **CATEGORY : OPERATIONS**

○ **DESCRIPTION**

○ Using Camera (fixed position / CCTV / Drones or Robots based) images as input for AI-MV to validate whether there are leakages or spillages or emissions and if so warn Operations immed in the agreed way for that Enterprise ie e-mail / dashboard / reporting / digital twin / etc.

○ Recent cameras will have limited AI-MV capabilities built in (plate recognition / people recognition / etc.)

○ Only when business decision is time critical (milli seconds) include Acuvate Edge Platform for (near) realtime AI-MV driven decision making.

○ Using (autonomous) Robots executing Operator rounds at remote or unmanned locations.

○ When (public) 5G network is available consider using that due to low latency and high throughput.

○ **BUSINESS VALUE**

○ Earlier spotting of these problems means that they cause no / less damage or threat to Operations and to production availability levels.

○ Higher throughput due to increased availability: How much will be different for every case due to current level of availability.

○ By using various AI technologies making it possible to better predict and inform Operations about upcoming asset failures; Give advice to Operations & Maintenance about potential causes of these failures & Supporting Maintenance staff how to fix this and making sure that all related (asset) documentation is updated.

○ End to end business workflow demonstrating the power of Gen AI as the single user interface for Operations / Engineering / Maintenance.

Watch the video now: https://2216042.fs1.hubspotusercontent-na1.net/hubfs/2216042/OrgBrain-For-Manufacturing.mp4

○ Predicting potential failures, identifying detailed cause and assistance to fix it; All resulting in less downtime (more production) and as well important better usage of scarce maintenance / engineering / operations resources.

○ Higher throughput due to increased availability.

○ OEE (Overall Equipment Effectiveness) is the industry standard for measuring manufacturing productivity. OEE is calculated using 3 attributes: Availability; Performance & Quality and OEE = A x P x Q. Availability is reduced by equipment failure, setup and adjustment. Performance is reduced by idling, minor stops, and reduced speed. Quality is reduced by process defects and startup losses.

○ The Acuvate Data Platform includes the hooks to make these calculations and show the results.

○ Based on the OEE standards which are well known in Manufacturing the factory owner can see how efficient the facilities are used.
Also compared to other factories.

○ Collecting, on an ongoing basis, settings information from all critical components from the production line and using advice based on Gen-AI (and related information) input whether settings can be improved based on (Machine 4.0) Industry experience elsewhere. Also historical information will be used as input.

○ Data collected based on business solutions to be implemented.

○ Optimised Production settings leading to increased production levels and therefore larger revenue.

■ **CATEGORY : QUALITY CONTROL**

○ **DESCRIPTION**

○ Using camera images & AI – Machine Vision (MV) to better spot product errors (wrong labeling / package damages / wrong language / leakage / etc.) with the option to spot these errors realtime meaning that faulty products will be removed immed automatically from the production line.

○ Realtime means that we need to add edge driven MV facilities and of course production line needs to support interface for interrupt signal to remove a given product from the line.

○ Of course AI-MV part needs to be trained for the packaging to be scanned.

○ A broad spectrum of products can be covered.

○ **BUSINESS VALUE**

○ Better QC leads to better quality; Spotted issues actioned without negatively impacting production numbers when using (near) realtime option.

■ **CATEGORY : HSSE**

○ **DESCRIPTION**

○ There is a broad spectrum of HSSE related services. In most cases it is mainly based on Camera (including CCTV cameras) images or other data sources. AI-MV and AI-ML to be used to analyze the data and to tell Operations what actions to take and where possible AI-MV can take immed action without involving Operations.

○ Examples: PPE / Zone protection / walking under lifting goods protection / dangerous emissions / damage causing dangerous situations / etc.

○ Some options, such as zone protection, require personal tags for the staff.

○ **BUSINESS VALUE**

○ Early spotting potential HSSE issues before they can cause harm to staff a Staff experience a better & safer working environment.

■ **CATEGORY : PROFESSIONAL INTERFACE**

○ **DESCRIPTION**

○ Most staff (almost every role) need to work with large amounts of (technical) information from many different sources and struggle to get the right info. Using Gen-AI as a single interface will be provided using your natural language to be given the right response to any query including relevant background info.

○ This service can be used by many different roles and information needed can be made suitable for that.

○ **BUSINESS VALUE**

○ Getting help in many aspects of your job and therefore better quality and faster decision making; As well better usage of scarce staffing resources.

○ Presenting results in a way best fitting a particular role: This can be based on simple dashboarding; reporting or by means of an Digital Twin where a complete 3D image of the facilities is provided with live data streams always giving uptodate information.

○ Gen AI also can play a role here ie maybe integrated with Digital Twins.

○ The type of interface to be used is very much driven by the customer set up.

○ Showing results / actions / etc. the most simple way for your role leads to faster decisions, better usage of resources & ultimate higher production

■ **CATEGORY : OWN BUSINESS APPLICATIONS**

○ **DESCRIPTION**

○ Develop your own business applications making use of the various Base facilities such as Acuvate Data Platform, Acuvate Edge digital platform & data loading; Therefore no need for own infrastructure developments, but you can just focus at how to maximize business differentiation.

○ Define your business application and we can assist you how to be best exploit our facilities

○ **BUSINESS VALUE**

○ Early spotting potential HSSE issues before they can cause harm to staff a Staff experience a better & safer working environment.