Developing Business Intelligence Model for small Industries with help of Industrial Automation

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ABSTRACT:

In the last decade, Business Intelligence (BI) became a popular technological advantage of the large enterprises which could afford to buy, implement and maintain BI solutions. Presently, small and medium size enterprises all over the world understand competitive use and benefits of BI. But due to lack of financial budgets of small industries and BI's high total cost of ownership have created a gap between large and small industries where small industries do not able to take advantage of of BI because of the affordability , lack of manpower & some technological issues . This research proposes a BI framework which provides automated data mapping with help of industrial automation to BI structure. The implementation of industrial automation in small scale industries provides convenience of use of BI and effective cost saving as it does not require any technical expertise and any non-technical user can get on with it very well.

Keywords: Business intelligence, small industries, Industrial automation

I.BUSINESS INTELLIGENCE

There are many professional definitions of BI exist in which. "Business Intelligence is a term that refers to collecting, structuring, analyzing and leveraging of data to turn it into easy ways -to-understand information. Another definition is "Business intelligence (BI) is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to database to help enterprise users make better business process and decisions .The goal of BI is to help decision-makers make more informed and better decisions to guide their business.

II.INDUSTRIAL AUTOMATION

Some of the reasons for need of automation are such as to Achieve more with less, Elimination of human error, Cleaner Technology, Consistency of product, Minimize Energy consumption, Easy diagnosis of fault, Reduction in Resources, Reduction of Peak Loads, Reduction in Effluent, Environment Protection, Improve Safety and Health, Reduce Maintenance (Chemicals, water, energy etc.), Reduce manpower, Data collection and consolidation, Effective application for Complex tasks, Trending and Report generation, Reduce Errors, Increase Speed, Increase Productivity -More automation equals more job capacity, shorter delivery times and optimized business operations, Reduced turnaround and fulfillment times add to overall productivity, Remove the Human Element against market- standard job, Reduce Waste, Expand Capabilities -Automating all parts of the workflow will increase capacity, Improve throughput and Optimize equipment use Workflow automation results in expanded capabilities and increased revenue

III. INTRODUCTION

Now a days industries produces large amounts of data. The processing and application of this huge amount of data to knowledge is a problematic job. In order to convert this data sources into knowledge and employing the knowledge to support decisions involves a combination of technologies and techniques like data warehousing, on-line analysis processing technologies, data mining and other tools. All of these technologies are coupled together to be called Business Intelligence.

The proposed model for user application to BI model makes simpler the process data mapping, validation, record keepings of small scale industries application. The proposed model helps in reducing time of data mapping, validating, record keepings of small scale industries application. It is also helpful for software BI to increase workers base and strengthen relations with their workers. We also identified that there is no single solution available to fulfill all the requirements for on-demand business intelligence solution.

IV. BI TOOLS

Business intelligence tools are a type of application software designed to report, analyze and present data. The tools generally read data that have been previously stored, often, though not necessarily, in a data warehouse or data mart .Business intelligence tools can be broken down into three categories: 1) Query and reporting; 2) Online analytical processing (OLAP); and 3) Information mining. There are numerous BI tools exist in the market for instance 1) SAP Business Objects; 2) IBM Cognos; 3) ProClarity; 4) and QlikView

V.AUTOMATION TOOLS

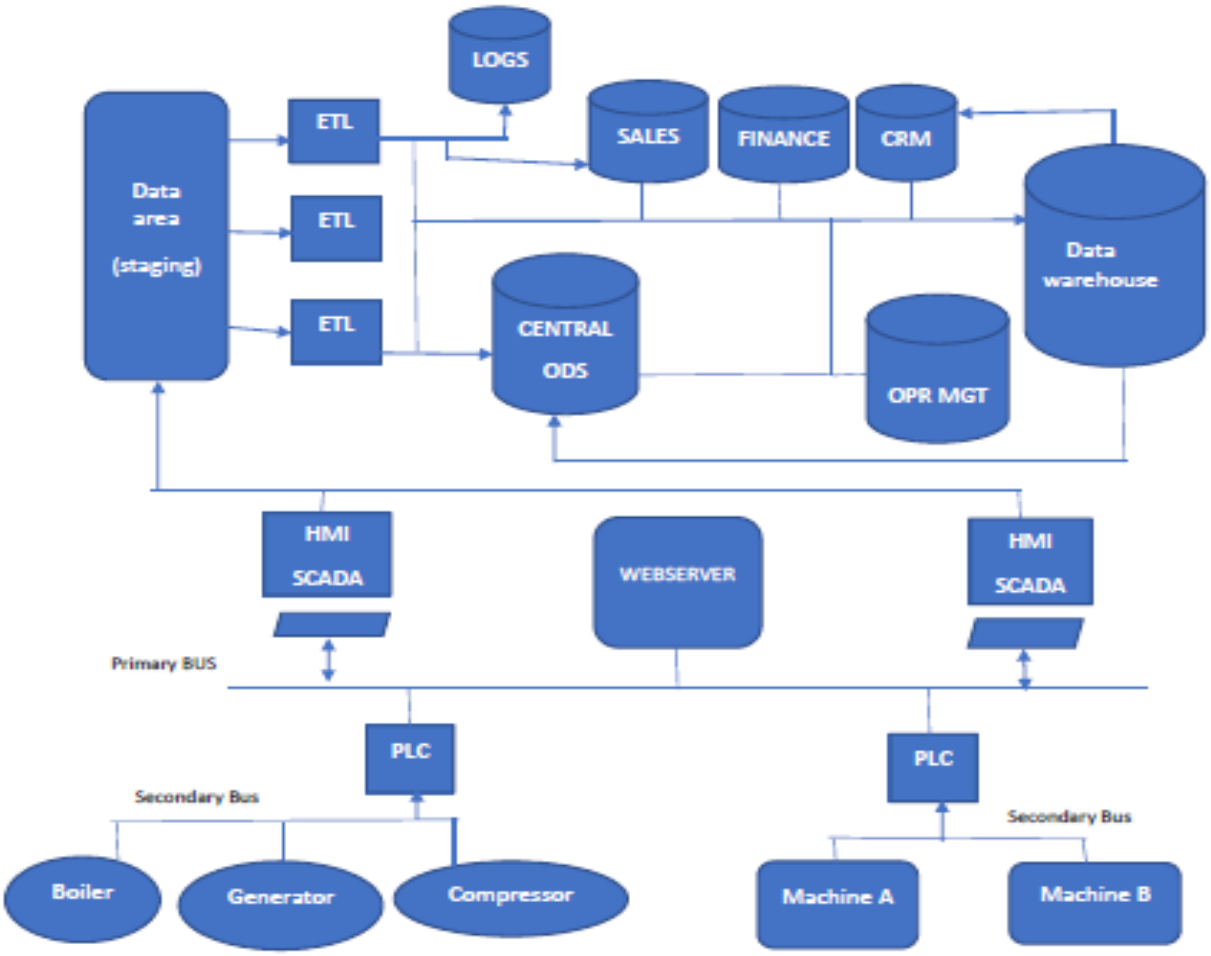
- PLC - A programmable logic controller, PLC, or programmable controller is a digital computer used for automation of typically industrial electromechanical processes, such as control of machinery on factory assembly lines, amusement rides, or light fixtures.
- SENSORS - A sensor is a transducer that converts a physical stimulus from one form into a more useful form to measure the stimulus.
- ACTUATORS - Hardware devices that convert a controller command signal into a change in a physical parameter.
- DRIVES - Whenever something must be moved, a motor is usually at the source of most automated equipment. There are many types of AC and DC motors.

- SCADA - SCADA (supervisory control and data acquisition) is a system that operates with coded signals over communication channels so as to provide control of remote equipment (using typically one communication channel per remote station.

VI.PROPOSED MODEL

The proposed BI model with automation facilitates the proposed model helps in reducing time of data mapping, validating, record keepings of small scale industries application. The framework format consists of forms, database, documentations, and dashboards. All information of reports and forms controls such as checkbox, labels, textbox, combo box, radio button, button, link button, tree view, timer, script manager, data source, and conditions are on form. The proposed model empowers to retrieve and store information required by the form and their controls. This is possible only if we have all the necessary information required by the forms and their process .We are covering industrial automation applications with helps of some automation tools and techniques. All users information stores are included in a table form with all of their business documents requirements by doing this we build a documentation for application of BI database Requirements which is very useful for future forecasting of business planning and decision making.

Fig.1. BI Model with Automation



VII.CONCUSIONS

We have focused to Industrial automation for atomization of data mapping, validation, and record keepings of small scale industries application to BI model. We have proposed a model with respect to small industries and firms based data mapping, validation, record keeping and data loading solution which will help for Business intelligence's development for small and medium-sized industries. The future plan is to extend this existing proposed model to support database on auto generated ETL mapping, metrics, and development projects requirements very effectively.

VIII.REFERENCES

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