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NEWEST INSTRUMENTS FOR QUALITY MANAGEMENT & MARKET FORECAST

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The future of quality management and market forecasting tools will be shaped by deeper AI integration with QMS, ERP, MES, CRM, and supply chain systems. AI will increasingly provide real-time quality recommendations and demand forecasts within daily operations. Industrial IoT, edge computing, digital twins, and multimodal models will support continuous monitoring, predictive simulations, and improved root-cause analysis using text, images, sensor data, and time series. AI will also evolve from decision support toward autonomous assistance in corrective actions, operational optimization, and dynamic planning, while maintaining human oversight. Greater emphasis will be placed on explainability, governance, cybersecurity, and sustainability, including energy efficiency, waste reduction, emissions, and ESG goals.

However, adoption remains challenging. Reliable AI depends on high-quality, well-governed data, yet fragmented databases, inconsistent records, and legacy systems remain common. Models must be regularly updated for changing markets and operations while meeting transparency and regulatory requirements. Organizations also face privacy risks, cybersecurity threats, and shortages of skilled professionals. Ultimately, successful adoption requires demonstrating measurable returns through improved quality, efficiency, forecasting accuracy, user acceptance, workforce training, effective governance, and redesigned processes.

- I. Introduction
- II. AI Quality Analytics compared to other management tools
- III. AutoML Forecasting Platforms
- IV. MLOps/ModelOps
- V. Discussions & Implications

Overall, the next generation of quality management and market forecasting tools will become more autonomous, predictive, and tightly integrated into enterprise decision-making. However, their success will depend less on increasingly sophisticated algorithms than on high-quality data, effective governance, human expertise, and the ability to translate predictions into timely operational decisions.