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The T1-Auto Inc. Production Part Testing (PPT) Process: A Workflow Automation Success Story

Charles T. Caine
Oakland University, USA

Thomas W. Lauer
Oakland University, USA

Eileen Peacock
Oakland University, USA

EXECUTIVE SUMMARY

This case describes the development, design, and implementation of a workflow automation system at a tier one automotive supplier, T1-Auto. T1 is a developer and manufacturer of anti-lock brake systems. In 1991, T1-Auto had outsourced its IT department. They retained a management core consisting of the CIO and five managers, but transitioned approximately 80 other members of the department to the outsourcing firm. In 1994, Lotus Notes™ was installed as the corporate standard e-mail and workflow platform. A team of four Notes™ developers wrote workflow-based and knowledge management-based applications. Another team of three administrators managed the Notes™ infrastructure. The first workflow application written at T1-Auto was developed for the Finance department. The finance team quickly realized the workflow benefit of streamlining and tracking the capital expense request process. The Notes™ development team and the project sponsor, the Controller, worked closely to develop the application. Following this initial success, the power and value of workflow technology caught on quickly at T1-Auto. One of the most successful projects was the Electronic Lab Testing Process described in this paper.

The Electronics Lab and Testing System (ELTS) was identified as a Transaction Workflow problem by the IT Lotus Notes™ team. Because the ELTS involved policies and procedures that crossed many groups and divisions within T1-Auto, and since the process was consistent across the organization, the solution lent itself very well to Lotus Notes. However, while T1-Auto was experiencing rapid growth and the number of tests was increasing, the testing process was prone to communication and coordination errors. As part of their production and product development processes, their electronics laboratory was required to test electronic components that were part of the brake systems. Clearly the testing process was critical to T-1 since delays or errors could adversely affect both product development and production.

The case goes on to describe the design and development of the Lotus Notes™ workflow management system. The design description includes process maps for the as-is and the new system. In addition, descriptions of the testing phase, the pilot, and the roll out are included. The case concludes with a discussion of project success factors and planned future enhancements.

T1-AUTOBACKGROUND

T1-Auto Inc. is a leading producer of brake components for passenger cars and light trucks. The most significant automotive products manufactured and marketed by T1-Auto are anti-lock braking systems (“ABS”), disc and drum brakes, disc brake rotors, hubs and drums for passenger cars and light trucks. T1-Auto is one of the leaders in the production of ABS, supplying both two-wheel and four-wheel systems, and was the leading manufacturer of two-wheel ABS in North America for light trucks. In order to meet increased ABS demand, T1-Auto built new plants in Michigan and Europe. T1-Auto is also a leader in the production of foundation (conventional) brakes, and benefits from its strategic position as a major supplier of ABS and foundation brakes for light trucks, vans and sport utility vehicles. T1-Auto also produced electronic door and truck lock actuators. T1-Auto operated six plants in the Michigan and Ohio areas and had one plant and engineering facility in Europe. The company operated a central engineering and testing facility near its corporate headquarters outside Detroit, Michigan.

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Since the incursion of foreign automobiles in the 1970s, the automotive industry has been characterized by intense rivalry of the participants. This affects the OEMs, the U.S. big three, and cascades through the supply chain. Because T1 is dependent on a few customers, they are subject to their demands for price, quality, and delivery conditions (Porter, 1985).

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