

History of Process Automation

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"Still round the corner there may wait,
A new road or a secret gate."
J.R.R. Tolkien

It's easy to forget in a world where things are moving at internet speed, where it all began. In order to understand where to go, you must first understand where you've been or you can easily lose perspective. The problem is where do you start, with the advent of writing which arguably is recorded as Mesopotamian Cuneiforms. Others such as the Mayans or Chinese may predate these early writings. But let's fast forward to the Industrial Revolution.

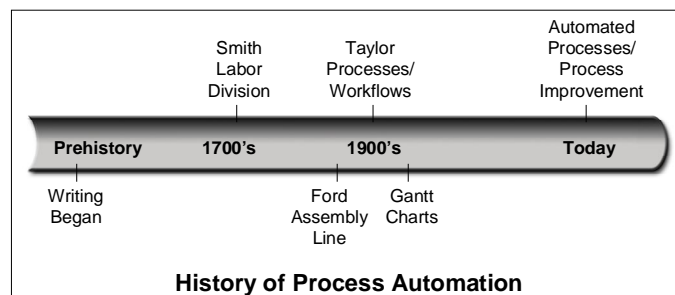
The Industrial Revolution started in England due to a variety of enabling conditions in that country, such as technical means, government backing, and it's diverse trade network. The first factories began to appear around 1740 in textile production. These first factories led to inventions from the cotton gin to power looms, which facilitated further industrial development. Always with an eye on the bottom line, dollars or for England pounds, methods of streamlining and making factories more productive were the trend of the day.

During that time, Adam Smith is credited as one of the first to recognize how output could be increased through the use of labor division in an English pin factory. He described the production of a pin: "One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head: to make the head requires two or three distinct operations: to put it on is a particular business, to whiten the pins is another ... and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which in some manufactories are all performed by distinct hands, though in others the same man will sometimes perform two or three of them'." These observations were published in his book, *The Wealth of Nations*, in 1776. Thus began a new way of thinking about how factories are managed and how production flows.

The recognition and acceptance of the division of labor in factories led to definition of processes, production, and workflows. The early 1900's in the United States saw a good deal more contributions leading to process automation. Henry Ford redefined manufacturing processes with his invention of the assembly line. He was the first to mass produce a product using machinery and an assembly line as opposed to the same workers assembling an entire vehicle.

Frederick Winslow Taylor, sometimes called the Father of Scientific Management, provided the foundation for the process/workflow approach to management in 1911 in *The Principles of Scientific Management*. He introduced the concept of systematic analysis of processes based on hundreds of years of factory operations research and methods.

At about the same time in the 1910's, Henry Laurence Gantt developed the still widely used Gantt chart. These well-known charts provide a visual aid for scheduling tasks and visually displaying the flow of work. Gantt actually invented many types of charts, including the ones still used today, bearing his name to show supervisors whether production was on schedule, ahead of schedule, or behind schedule.



These key occurrences and many other contributions set into motion process workflow automation. Process workflows provide a means for the movement of tasks and documents through a work process. In today's Digital Age, there are many methods and tools available to facilitate workflow development.

There have been many other significant contributions to the process automation world with bigger, better, and faster production key. These changes have changed the information technology world forever. They happened because of the need to automate the way things are accomplished, which has lead to further advancements.

By automating process improvement, it opens the door for further improvements in the way an organization does business. As the digital age moves forward, we will see changes happening at internet speed, or faster, and organizations must be prepared to handle these changes. Automating process improvement is imperative to keeping pace with technology and today's increasing trend toward globalization.

Biography:

Ms. Jacobs has more than 28 years experience in information technology, including system/software engineering, project management, process improvement, and proposal development. She has helped many organizations be more successful in development and management. She uses this experience with various organizations providing training and consulting services. She has authored many technical articles, the popular book Accelerating Process Improvement Using Agile Techniques, and is currently working on her new book Requirements Engineering So Things Don't Get Ugly. For more information: www.debjacobs.net.

Bibliography:

1 - "The Wealth of Nations", Adam Smith, 1776