



DIGITAL LABOR SERIES

RUMJog Automation Maturity Model

Abstract

Emerging trends in the area of Knowledge Worker Automation vary greatly in terms of both the type of automation and the resulting business impact of the automation. To facilitate more effective communication and understanding of the differences of the types of Knowledge Worker Automation, RUMJog Enterprises has developed the RUMJog Automation Maturity Model (RAMM).

October, 2014

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Digital Labor Series: RUMJog Automation Maturity Model

Introduction

Over the last 2-3 years, we have been studying the effects of Knowledge Worker Automation in the delivery of services in the marketplace. Automation in the agricultural and manufacturing sectors has been with us for decades; however, automation of the Knowledge Worker is relatively new.

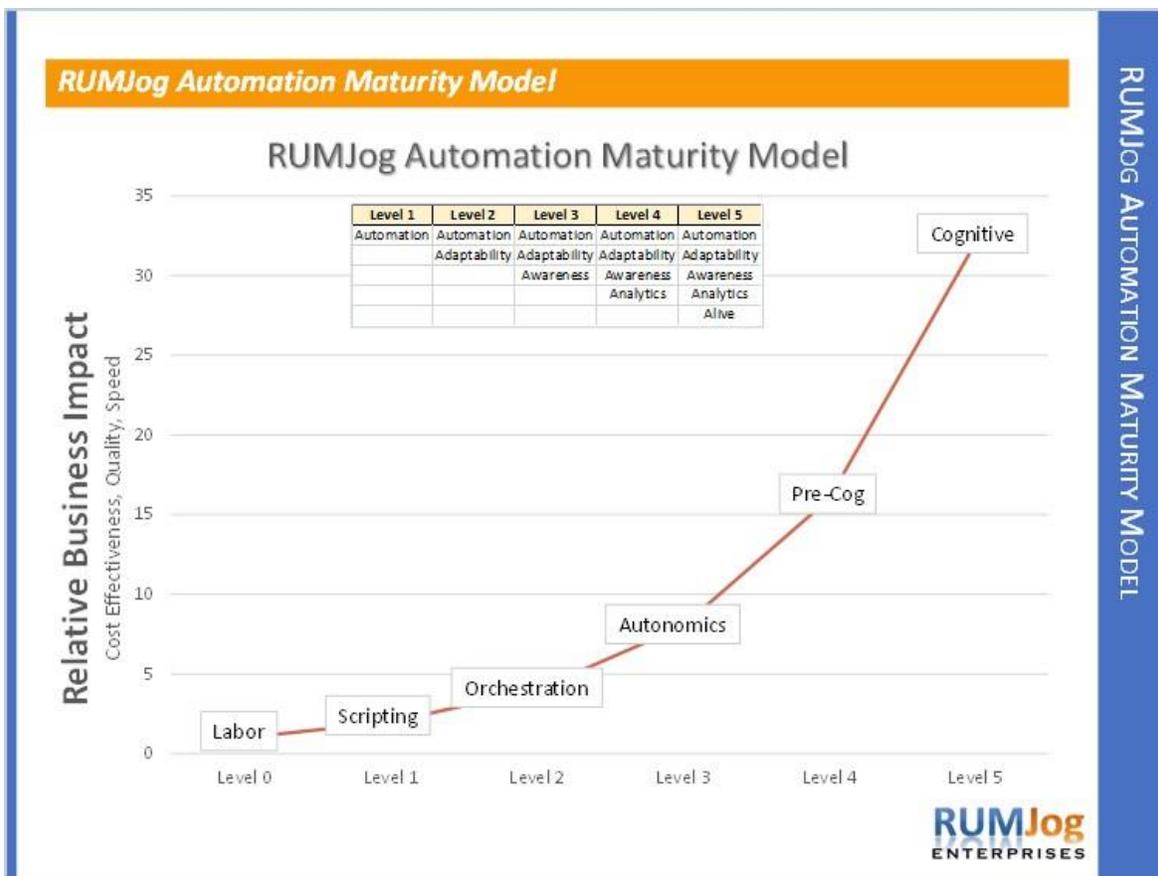
In March 2014, we discussed the differences in automation between agricultural, manufacturing, and knowledge work in our white paper entitled, “Knowledge Worker Automation: Faster Than You Think”. In today’s piece, we discuss automation within Knowledge Worker service delivery and introduce the RUMJog Automation Maturity Model (RAMM) to describe the differences of automation types and the relative impacts to the ecosystem.

In many conversations I have with people, it appears that they think about automation in a binary do/don’t paradigm. That is, they think automation is something done or not done and there is not a full appreciation of the spectrum of the different types of automation in the marketplace. When we talk about future trends, it appears that people do not have a working automation framework in order to better understand what is happening today and what is likely to happen in the near future. This is why we developed the RUMJog Automation Maturity Model or RAMM.

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In RAMM, we have five levels of automation building off of Level 0 (see graphics below):

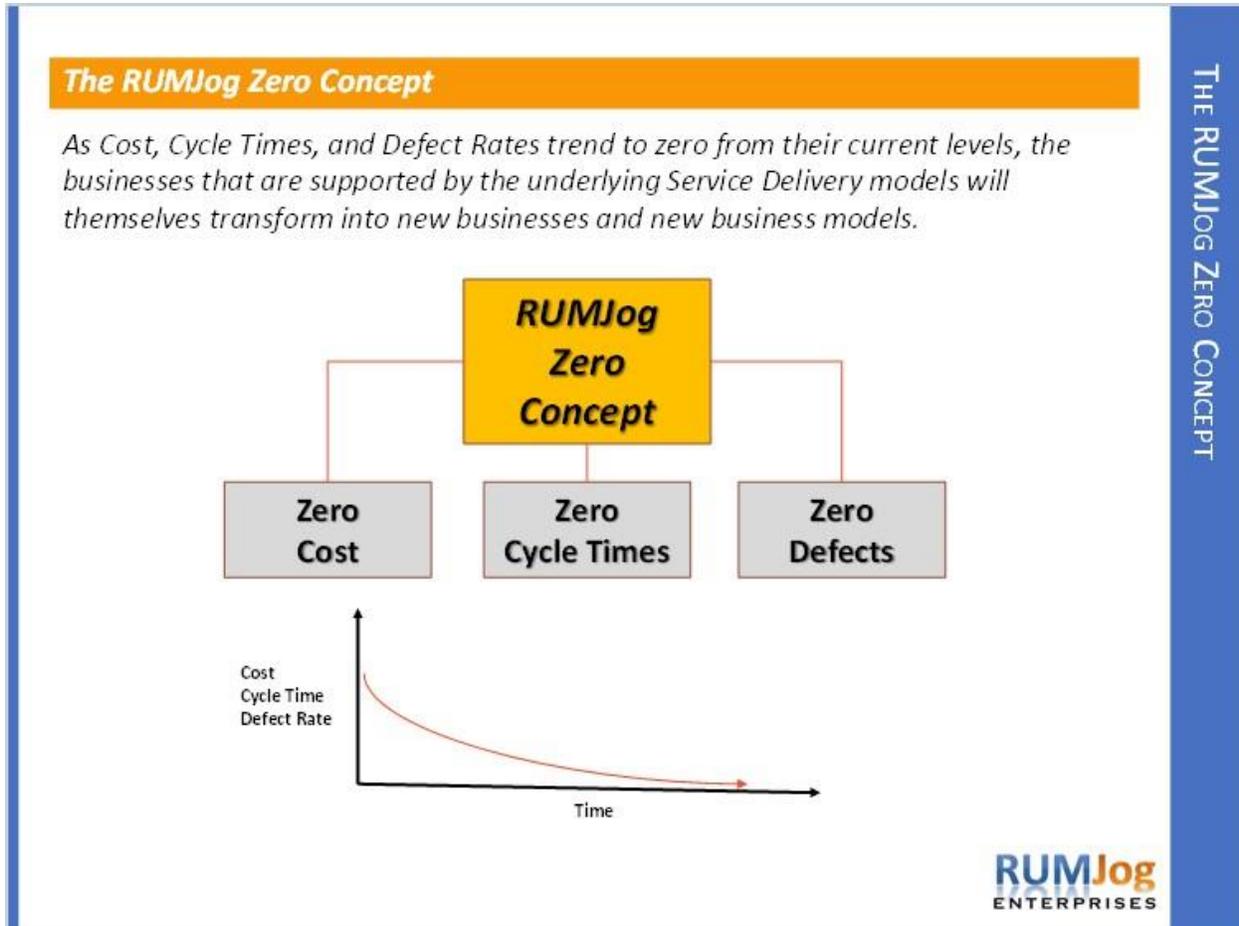
	Description	Attributes	Business Impact
Level 0	Labor		1
Level 1	Scripts	Automation	2
Level 2	Orchestration	Level 1 + Adaptability	4
Level 3	Autonomics	Level 2 + Awareness	8
Level 4	Pre-Cog	Level 3 + Analytics	16
Level 5	Cognitive	Level 4 + Alive	32



The levels in the RAMM break down the different aspects of automation and show the relative Business Impact in the ecosystem. The impacts are non-linear as each successive level has impacts much greater than the prior level.

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What are the Business Impacts? There are many, however, the three main business impacts are [1] cost effectiveness; [2] quality; [3] speed. When these measures improve, metrics like unit costs, defect rates, and cycle times trend towards zero. This is the basis for the RUMJog Zero Concept (see below):



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To further elaborate, let's describe the levels of RAMM in a bit more detail:

Level 0 – Labor

Labor is exactly how it sounds. Labor is used to perform work or tasks. Within Level 0, there is varying levels of efficiency based on experience, training, tools, and process design. However, for purposes of the RAMM construct, we will describe all labor based models as Level 0.

Level 1 – Scripts

What are scripts? In this context, scripts are essentially simple programs that can automatically run a series of steps to complete a task. Scripts are highly structured and are a foundational building block in the automation world. Scripts work well when the tasks that are scripted follow standard and repeatable steps. Scripts do not work well when the routine required to complete the task is highly dynamic.

Level 2 – Orchestration

Orchestration organizes and leverages a library of scripts to complete a more complex work flow or process that requires more than one script. Think of a symphony playing music. The individual instruments are the scripts; the conductor of the symphony is the orchestrator of the music. Orchestration in the context of automation can perform a significantly more complex set of work processes which can significantly reduce reliance of classic labor in highly defined but complex operating systems. Essentially, orchestration adds the sophistication of ***Adaptability*** to base ***Automation***.

Level 3 – Autonomics

Autonomics builds off of Level 2 and adds ***Awareness*** to the mix. Instead of music, let's use a car analogy. Level 1 – basic cruise control; Level 2 – adaptive cruise control; Level 3 – the Google Car. In this analogy, Level 1 & 2 make the driver more efficient, and in Level 3, the driver is replaced. Therein lies the non-linear impact to the ecosystem of Level 3.

Awareness is the key to Level 3 – an autonomic system must be able to change the orchestration protocols based on the conditions of the systems. Think about a left hand turn in traffic by the Google Car. In order for that to work, the Google Car must take into consideration things like angle of turn, traffic, traffic signals, etc. It is insufficient to simply play the "Left Hand Turn Symphony".

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In IT Operations, Autonomic solutions replace IT engineers, the way a Google Car replaces drivers. Many large Service Providers (IBM, HP, Wipro, Accenture, BT, NTT, Dimension Data, Infosys, etc.) and some technology firms (IPsoft, ServiceNow, CIRBA, Arago, BMC, et al) are deploying a variety of autonomic solutions in the market. These solutions vary widely in terms of the impact on the ecosystem depending on the technology and firm delivering the autonomic solution. Business impacts are 30%-50% on labor, 75%-95% compression on cycle times, and 90%+ improvement on defect rates.

Level 4 – Pre-Cog

Pre-Cog systems take autonomic service architectures and add ***Analytics*** to the mix. In the movie *Minority Report* with Tom Cruise, the system is able to see into the future and the Division of Pre-Crime is able to arrest people before they commit a crime. In 2002, Pre-Cog was science fiction. In 2014, Pre-Cog is emerging as the next leg up in automation technologies. This is happening as a result of the extremely large data sets developed from environmental telemetry being processed by sophisticated platforms like IBM's *Watson*.

Pre-Cog allows the service telemetry to “see things” before they happen. This is a form of automated root cause analysis (RCA) where the system automatically takes corrective action before there are problems. Experienced humans do this in relatively simple environments, but a computer based pre-cog platform can consider hundreds and thousands of variables in both real-time and time-shifted sequencing (Dynamic Time Warping) to look for and correct real system anomalies and not chase false positives which is common in most environments.

In IT Operations, Pre-Cog deployments will allow a complex IT operation to self-tune and auto-configure itself depending on the current and future conditions of the ecosystem. In IT architectures that are “as-a-Service”, firms will be able to virtually eliminate the spare capacity in the system without sacrificing performance.

Level 5 – Cognitive

Cognitive systems go the final step of having the system architecture understand what it is doing. The system may understand the primary goal or the system could have a more sophisticated understanding where the system knows unstated or implied goals. The output of a cognitive system may be prescriptive, suggestive, informing, or unexpected. Essentially, a cognitive system starts to behave and act like a human – a really smart, really fast human that can see almost all environmental telemetry. Here we are on the boundaries of a self-aware system – Level 5 adds ***Alive*** to the mix.

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If this sounds like science fiction to you, you are not alone. Just know that there are many firms who are working at the front edge of neural cognitive sciences and applying this science to computer platforms at a frenzied pace. The firms range from Silicon Valley startups like Vicarious, to Autonomic technology leader IPsoft, to Google and IBM. Billions of dollars are being invested and the impacts to the global economy when these technologies emerge from the lab will be in the trillions of dollars.

At RUMJog, we have seen many of these technologies behind the scenes and it is unbelievable in two dimensions – Wow! and 'hard to believe'. It is so mind blowing that our innate normalcy bias kicks in and we say “this cannot be true”. Don’t bet on it. These technologies are months away from being tested at scale. One of our clients, IPsoft, will be unveiling their Cognitive Platform called *Amelia* later in this year. When people see the Amelia platform in action, they will begin to shed their normalcy biases and begin to think about a new world ahead of us.

Conclusion

Automation is not a single state condition Automation varies from routine scripts to “self-aware” cognitive platforms. The RUMJog Automation Maturity Model (RAMM) gives us a framework for understanding the different types of automation and the associated impacts to business environments. When assessing the potential impacts to automation to your IT or Business Process environment – you must understand that the business impacts are non-linear as you progress from RAMM Level 1 to RAMM Level 5.

Lastly, at RUMJog we consider ourselves experts in this domain. That said, we would be the first to say that we do not know everything – we are not sure that anyone can know everything in this fast changing market.

Our final bit of advice is this:

“End your sentences in question marks these days and avoid using too many periods. Be open to the possibility that things that have been considered science fiction may, in fact, turn out to be the new normal in the years ahead.”

We will be posting a whitepaper on this subject on the RUMJog website later this week. If you would like us to e-mail you a copy of the whitepaper, send us a note at info@rumjog.com request that paper be sent to you directly.

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About the Author



Thomas Young, Founder & Managing Partner

Thomas is the Founder & Managing Partner of RUMJog Enterprises, a technology, media, and public sector management consulting company launched in 2013 to help businesses adapt and thrive in the face of accelerating change in today's market. Prior to forming RUMJog, Thomas was a Partner and Managing Director at TPI & ISG for over 12 years, holding a variety of leadership roles in the Americas.

Thomas has more than 20 years of consulting experience in the IT Services industry with a focus on Financial Services and holds a Master's Degree in Systems Engineering from Rutgers University.

RUMJog Enterprises was created as a parent company of a portfolio of next generation firms designed to re-invent the way business is done to better serve the big players in the services industry looking for true business transformation.

Thomas specializes in area of emerging technologies with particular focus on process and labor automation and the impacts on business ecosystems.

Additionally, Thomas currently advises several other organizations like Becton Dickinson, IPsoft, IBM, British Telecom, Wipro, HCL, KPMG, and others.