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**Email Client**

To Samantha Baugus

Cc none

Subject ENG Planning Email #2

Professor Baugus,

Failure is the seed of innovation. Every time a problem is solved, another one arises, resulting in a loop that pushes our developed society further into the future. This recurring loop is the source of our reality: cities, cellphones and even plastic; the list could go on forever. Fortunately, to keep the discussion focused, one topic of failure will be highlighted: Automation.

Automation is a rapidly evolving subindustry of engineering, but it has been around for a while. There are dozens of applications of automation, so there are many failures to uncover from all the different implementations. Ironically, there is a common theme among most of these failures, over-automating. Better put, automating too much, too soon.

Most types of over-automation mistakes involve too much optimism, and too little consideration for the system as a whole. Over-automating leads to issues such as fast-spreading errors, lack of qualified personnel and high rates of unsatisfaction from both developers and consumers.

Since it mostly pertains to software, it is advised to use both destructive and “conventional” methods for detecting failures in automation systems. It is impossible to know how users - of the software, and autonomous systems - will handle it when it is outside of the development and debugging environment, this highlights the importance of testing in both manners.

Over-automation is a recurring problem and many of the early adopters are learning the hard lessons for the rest of the industry. They are the ones that are helping standards be made, such that the majority adopters have a streamlined, safe and successful experience during their uptake of automation. Some examples are safety, interfaces of automated systems (grachics, popups, menus, etc.) and interoperability. These standards make operating these systems generally more reliable. I plan to dig much deeper into these standards and regulations, expecting this section to be the most information intensive.

Data on how adoption of automation has changed is an important general metric to track. Does the adoption rate trend with anything else? GDP? Politics? It would be highly impactful to know if failures are higher in areas with poor management, or high growth, or both. Where are failures with automation the highest? What industries? All of these data could be converted into figures.

Automation will follow an unpredictable, yet highly impacting trajectory into the future with society. It is important to analyze the failures of the past, to verify the methods of the present are valid, to ensure the outcome of the future is sustainable.

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