LEARN, UNDERSTAND, SIMPLIFY, IMPLEMENT AND OPTIMISE: FINDING THE TRUE VALUE IN DIGITALISATION

aidrivers
Autonomous Mobility. Invented for sustainability.

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"DIGITALISATION SHOULD NEVER BE PURSUED JUST FOR THE SAKE OF IT."

Here's a question: What is the point of digitalisation? Too many people might reply: "Well, digitalisation!" Let's put that right straight away, because such a misunderstanding often leads to digitalisation projects which bring little or no value to anyone, only adding complexity. In short – with no point at all!

Digitalisation is not just moving stuff out of a paper book and on to a computer system. Where is the value in that? Digitalisation should never be pursued just for the sake of it. It should and must deliver new dimensions and benefits. We need digitalisation that will ease and streamline processes, save time and cost, reduce repetitive tasks and eliminate errors – as well as, it is expected, cutting waste in the form of wasted energy, effort and unnecessary stress.

So what do we want in a digitalised supply chain? Affordability, trackability and traceability, which lead to self-aware operations and real-time information access with transparency and so on. But the first priority must be to understand what is happening now. Establish how things work, then identify the problem which needs to be solved and the expected outcome. It is important to have the holistic view of before, during and after your digitalisation exercise, so it is all about defining what your 'digitalisation success' looks like.

Once you have established what processes are to be changed, consider the usefulness of your digital proposals. Make sure there is a tangible, true value associated with them. Consider affordability. If your digitalisation proposals are going to end up adding time and cost to the process – which could be due to various factors for example, your users may not have the necessary tools or knowledge or training for effective use of the system – then why are you pushing forward with them? Make sure you have a very good argument to support what you are going to pitch and push. You already have an excellent baseline – use your current system as a benchmark. If your system is already 'good', then the definition of 'better' is that you do not just trash what you have at the moment. If you make massive changes to your ongoing processes without sufficient thought, this could lead to a different major problem that could lead to even bigger problems.

It might have taken 10 or 20 years to build up to the supply chain system you have today. If you change something dramatically without thinking things through, you could end up with a huge challenge and no option but to roll back to the old system. This is not an exaggeration – it has happened many times, with some extremely high-profile, highly trumpeted projects ending up being cancelled.

Bearing all this in mind, the top layer of the argument is this: your digital supply chain needs to have self-aware and connected feeling. You need to make sure that everything works together – with each other not against each other. The second layer is – how do we get there? The effective approach is to continue building on what you already have, to gain the experience to make your effective things efficient without disrupting your operations and/or risking any big loss. Work on a component at a time. There is no need to wipe out everything and deploy all of the replacements at once.

Aidrivers' approach to autonomous mobility solutions in ports and logistics is applicable to your current operations, and yet delivers a true resilience and connected operations. For example, when transferring a truck or a crane from manual to autonomous, we equip the equipment with a cognitive intelligence and capability to provide the same capability as your current driver or operator without any change to your infrastructure or environment.

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We work out how the crane currently operates and how it fits into the overall system; we then ensure it delivers the same performance as current operations and beyond, before moving on to the next stage, thereby safeguarding sustainable change.

True sustainability in this context is satisfying the operational requirements but not the technology definition; and such a small change leads to bigger and better efficiency of effective systems.

Often consultants who work on so many projects simultaneously have very deep knowledge and understanding of the technology solutions, but it can be difficult to pay detailed attention to your operations, which are bespoke and different to each operator.

The successful approach to any level of digitalisation is to 'walk through' the perfect system as it is already running and consider all angles from the perspective of the people who are going to run the new system.

One pitfall for the experts is imagining how they themselves would use the system and how they would meet any challenges – while failing to put themselves in the shoes of the actual users, likely to be people who don't have the same extent of knowledge or experience. We may be talking about digitalisation but we must also deal with reality! Digital projects and solutions are generally developed and implemented by people with high levels of knowledge and expertise who have the drive to make the most out of it – rarely by the people who will end up using them.

In the context of digital supply chains, the initial step should be understanding what you need from the start and ensuring that is well defined. The big priority is awareness. You may as well forget about any digital supply chain proposals if they are not going to contribute affordability, traceability and trackability of what is going on in your operations. Look at the supply chain from every angle and seek a connected and self-aware operation.

Real-time information accessibility has become a core priority today. For instance, consumers doing their shopping online expect real-time updates and a connected feeling: when the order has been placed, accepted, packed and dispatched; when it is with the courier; when it is out for delivery and what the delivery window of time is. The same applies to your 'consumers' throughout the supply chain. Factories, assembly plants, distribution centres, fulfilment centres, logistics providers, shops – all want certainty as to where their items are and when they can expect delivery.

Next, think about being able to adapt your system according to what is going on in the world – as we all know, recent upheavals have included COVID-19, container port congestion and the ongoing conflicts around the world, each of these having a significant impact on thousands of supply chains.

When introducing any new system, it is essential to find ways to do this without stopping your service. When 'clever' new systems end up in failure, companies will ask: Why did it happen? Usually, it is because they did not think ahead, they did not do enough planning or simulation, they did not model the system, they made assumptions, and (probably) they made things more complicated than they needed to be.

Taking autonomous mobility solutions as a parallel again, Aidrivers' autonomous automation solutions are benchmarking based on your current performance and ensuring there are no new surprises – instead delivering efficiency, resiliency and cost-reduction. You can test anything you can imagine – and you must also find an answer for each and every situation. Imagine you set up a crane based on a system that handles 20 or 30 jobs an hour. That may have been calculated from data and expert knowledge that the driver of the manual crane handles that many moves. But what happens if there is a delay, a vehicle does not arrive on time or is misaligned, the wind suddenly strengthens or something else happens in the real world? The system must be able to monitor and allow for such unexpected effects.

If a port has 100 regular drivers and an automated system is based rigidly on the same profile for all the drivers with a fixed model, there will be problems. It is not difficult to see how a very minor variation in driver behaviour or habits will throw out the calculations.

Sensors with real-time data availability can monitor and measure the whole operation – detecting when vehicles are taking longer and informing the system so that the number of trucks coming in through the port gates can be adjusted accordingly to avoid congestion.

We are all learning, all the time. We must find even better ways to

use technology for optimisation of the supply chain, based on experienced understanding of the system as well as evidence built on data, mathematics, AI and machine learning.

Aidrivers focuses heavily on autonomous simulation and cognitive-based systems to test and optimise the systems continuously – this reflects both digital and physical worlds, thus it can be achieved without any disruption to the current physical operations of the port. We tell the port operators we work with – you do not have to wait to find out how your system will behave if you have 100 autonomous trucks. We can tell you that now, because we already have a digital world of your environment.

We say port operators moving into autonomous automation with cognitive capability should never have bad surprises. At Aidrivers, we are clear that any new system must be have the ability to be compared and evaluated to eliminate any uncertainty. That does not mean we eliminate risk – after all, we would never get out of bed in the morning if we wanted to eliminate all risk! Risk is part of our lives and that makes us more excited to live every day. Risk is part of the adventure.

Aidrivers is confident that its system can contribute for better supply chain operations with effective planning and optimisation through an autonomous ecosystem. Future planning needs to consider dynamic behaviours, via AI and autonomous technologies.

Overall, the message is that we must know what to expect. The fundamental expectation in supply chains is a connected operation that delivers traceability and trackability; what is happening in real time, enabling you to have connected operations which provide insight into what is working or not working, and go ahead and improve it.

Be pragmatic in your approach so the change can be measured.

ABOUT THE AUTHOR:
Dr. Rafiq Swash is the founder and CEO of Aidrivers. He is a seasoned professional with a decade of experience in international technology-driven industries, academia and world-class research centres. Dr. Swash is an award-winning, visionary thought leader in maritime and the Top 100 Leaders in Education, with over 15 years of professional working capability in autonomous technologies, visual information search and retrieval, advanced 3D imaging systems and scalable computing.

ABOUT THE ORGANISATION:
Aidrivers is an AI-enabled autonomous technology company whose mission is accelerating autonomous technology to deliver the optimisation, resiliency and safety that industry needs for a sustainable future. Aidrivers develops AI-enabled autonomous mobility solutions tailored to meet the needs of industrial operations for a sustainable future, particularly in the ports sector.

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