

2: Maintenance Efficiency - making life simple



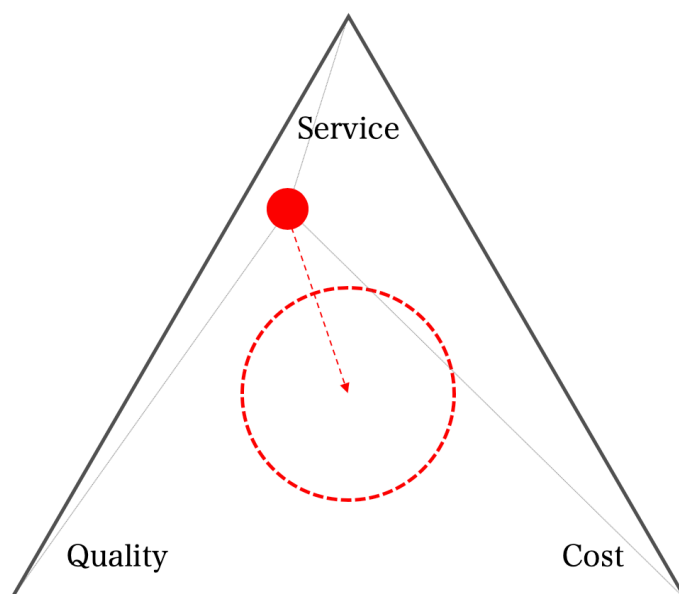
First published on LinkedIn, 20th March 2020

Introduction

In the last article we spoke of the importance of reviewing our performance and how such reviews in a learning culture leads to desire to improve performance. The next question is the 'why' and 'how' questions, and we tackle those in this article.

Let us start with the why...

If you consider the service/cost/quality diagram below, the first question I would pose is where is your dot? In most organisations that EngPro work with, we witness that the 'dot' is more service-biased than centrally balanced. To a point this is understandable as the immediate needs of any business is revenue, and in a transport business, without a service, we have no passengers and consequently no revenue. So it naturally sits very high on the executive table. We observe less of an executive management focus on cost and quality. *Technical quality* is typically guarded by the technician and junior manager level, and usually these grades are over-cautious in their approach to technical quality. Total quality, those customer-facing items that bring passenger satisfaction has significantly less focus at technician level. In the desire to meet service, we see aircraft dispatched with IFE faults and trains dispatched with Wi-Fi failures – the onboard crew will love engineering for that little customer satisfaction time bomb!

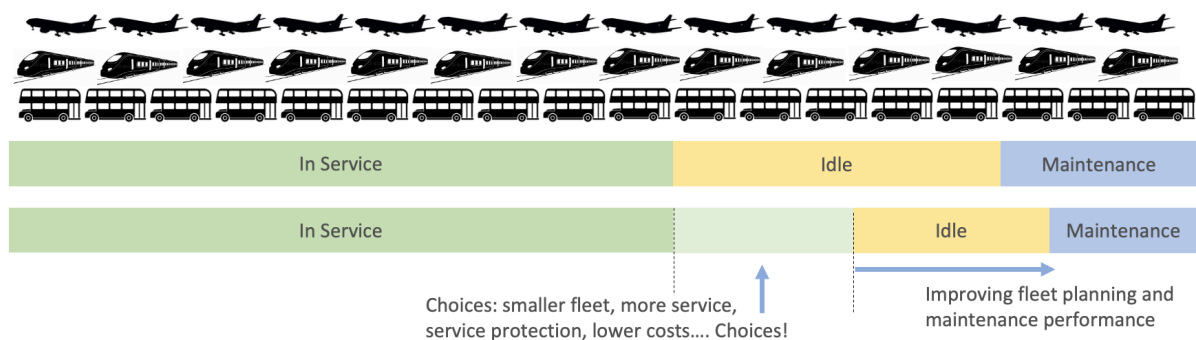


The competitive nature of your commercial landscape normally drives how much management focus is placed on cost control. High competition, sees

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high cost focus, lowered competition sees reducing cost focus. EngPro witness the highest proactive cost control in Bus, and least in Rail, with aviation in the middle. **So where is your dot?** And..... Where do **you want it to be?**

The prize for improving fleet planning and maintenance efficiency is our ability to choose, highlighted in the diagram below. We have a finite 'fleet time,' the number of vehicles multiplied by 24 hours per day. We can only use them once for one of three reasons; in service, idle or on maintenance. Better fleet planning should yield higher utilisation rates and lowered idle time. Improving maintenance efficiency will reduce the time vehicles are in maintenance. Tackling these releases fleet time, that we can chose how we use. For example, we may choose to run the same service using less fleet, or we can have stronger fleet recovery protection, or reduced costs.



Understanding the business strategy drives the output that engineering must provide. In our experience that question is seldom asked; I couldn't tell you exactly why that is, but if I was pushed I would suggest it is because maintenance is not understood. We engineers turn maintenance into a secretive, dark, art, full of three-letter abbreviations (TLA); and then we complain when the rest of the executive don't 'get' it.

Turning to the how....

Although the technical aspect of maintenance is relatively complex the business of maintenance is fairly simple. Consider when we take our car into the dealership for service: firstly we are triggered to book it in, we arrange a time, drop the vehicle off, have choices on hire car etc. Let's call that **pre-input**.

The car is taken by the service manager, some prescribed work is undertaken, requiring some materials and trained people, sometimes some defects are fixed, we get sent a video of the inspection etc. Let's call that **production**.

Finally then, the car is valeted, brought back to the collection point, the service manager goes through the paperwork, and often walks you to the car (removing the seat protector as their last task). Let's call that **release**.

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Take the technical aspect out of the equation and maintenance is similar to many other business transactions.



A Plan-led approach and Productionised maintenance are the wrappers we use to describe excellence in the three key process steps highlighted above. It forms the bedrock of EngPro's offerings.

Generally we observe that insufficient effort or energy is placed in each of the areas highlighted above. Or due poor process controls energy is wasted; either way the output is the same – reactive maintenance. What are the tell-tale signs:

- ❖ High levels of repeat defects
- ❖ No fault found
- ❖ “No time to complete”
- ❖ Cat 4/5 defects not systematically actioned
- ❖ Lack of feeling in control
- ❖ Service availability challenges
- ❖ Customer satisfaction low priority

Pre-input is where the plan-led approach takes shape. In this phase the role of the planning engineer is to gather all the available intelligence from around the business and craft ‘an agreed and shared plan that delivers the business objectives AND utilises all the resources of the business in the most effective manner.’ A plan that:

- Matches load and capacity
- Manages defects (non-routine) work
- Manages constraints
- Builds contingency
- Everybody commits to deliver

This can only be achieved at pre-input stage, yet time again we see vehicles rolling up for maintenance and a plan is hatched on the hoof; a plan that might deliver service tomorrow, but is unlikely to use the resources of the business effectively. The pre-input phase is where costs can be managed and it is the point where there is time built in to allow a quality release to be achieved, every time.

Killer question to ‘test’ your pre-input process – ***“what is our forecast service availability, next week?”***

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During the **production** (or doing) phase the main role is to undertake the prescribed list of work in the most effective and quality-driven manner – meeting the output time allocated. Productionising maintenance is about borrowing the practices from the manufacturing production-line and applying those to the maintenance task (cognisant that maintenance and manufacturing are different, and some translation is required). Tools such as LEAN are very helpful in identifying time wasted in gathering materials, collecting instructions and tools. Measuring technician touch-time, the time they actually have to work on tasks on the vehicle, is a key measure to help eliminate perished hours – we will talk more about *deployed productivity* in a future article.



Killer question to ‘test’ your productionisation – ***“what is was last week’s output productivity?”***

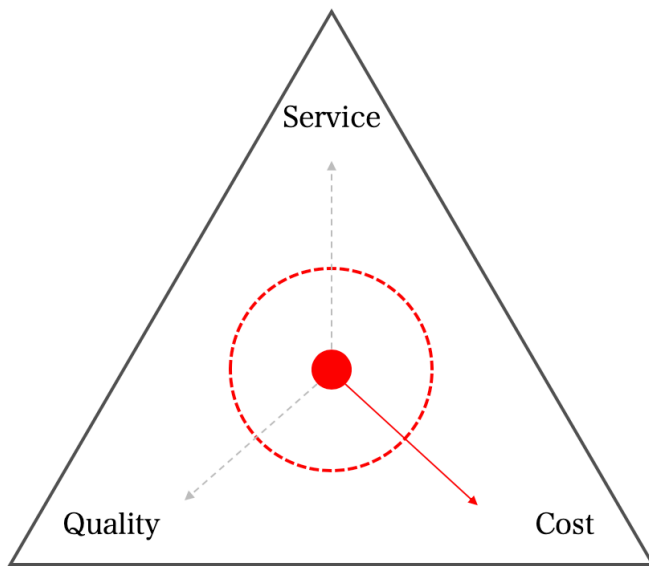


Release phase – often it is heard said that “when the maintenance is signed off, the task is done!” Technically that is correct, however, what is missed in that statement is the customer! The release phase is added to ensure there is a point in the flow of work that considers the customer. Think back to the car service, at the end, the service manager removes the seat protector – why do they leave it till then? Simply so that the customer can see that care has been applied, the perception of the customer is everything. Do our service

manager equivalent person do the same thing? During the release phase we should look at the cleanliness, final checks, handover to pilot/driver etc.

Killer question to ‘test’ your release phase – ***“what customer sound-bites are we hearing?”***

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Getting these three phases embedded in well-designed, well-defined and, well-used processes will allow you to bring the 'dot' into the middle. Without them, the organisational model will be highly reactive, costly and, limited in its ability to flex demand. In short, it will not be efficient.

At EngPro we have significant experience reviewing present process efficiency and effectiveness as well as introducing plan-led approach to maintenance in a manner that is appropriate and sympathetic to the size and strategic vision of your business.

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