



White Paper 2023-10

How to Improve the Management of Large Numbers of Punch Points and Design Open Points

During the later phases of industrial projects, design Open Points can be identified during detailed design or fabrication design that require treatment to ensure the overall consistency of the facility design. Punch Points are also identified during commissioning and pre-hand-over that generally need to be rectified prior to hand-over or startup. The traditional management approach is to use registers, some prioritisation and assign points for action within the project team. When such open and punch points are numerous, other alternative approaches can be used that are more effective. In this White Paper we address how the management of such large registers of open or punch points can be done differently.

Conventional approach to Open Points and Punch Points

What are Design Open Points and Punch Points

Design Open Points are issues being raised during the detailed design that need to be fixed or completed, for example: missing characteristic of an equipment which is assumed but needs to be confirmed, assumptions on interfaces, inconsistency detected upon further design detailing or execution design by fabricators, etc.

Punch Points are issues being raised generally during the facility review at mechanical completion or commissioning. Those issues deal with inconsistencies of the as-built facility with the expectations or design, localised damage, replacement of faulty equipment etc.

Conventional register-based and flow-based approaches

The effort for closure of Open or Punch Points ranges from quite effortless (e.g. documentary evidence, reconciliation of assumptions with actual data), or to substantial effort (justification of situation through ad-hoc calculation note, provision of replacement equipment, rectification work etc.).

To manage the sometimes thousands or tens of thousands of Open Points and Punch Points generated continuously on large industrial projects, the conventional approach is to open and manage a register and manage each item individually.

Good practices in the traditional approach also include assignment of a priority and/or criticality level to the Open or Punch points. This can serve as a weightage system for overall reporting. This criticality level can also be linked to some timing requirement, for example that high critical Open or Punch Points need to be closed within a certain period or before a particular milestone (e.g., introduction of hazardous material).

In terms of good practices that are not systematically implemented, a flow management approach can also be

implemented, measuring the influx of new Open or Punch Points and ensuring that the rate of closure is commensurate or higher on average for convergence. Ageing of Open or Punch Points should also be measured.

Drawbacks of the conventional register-based approaches

Faced with a large register of Open or Punch Points, the tendency will generally be to address the easiest to resolve first, which makes it important to have, if possible, statistics that account for the closure effort so as not to be overly optimistic on the closure rates. Thus, generally the harder points remain for closure for quite a longer time; they also often need a multi-disciplinary approach.

In the conventional approach, Open Points and Punch Points are generally assigned to personnel that have other important tasks for the project and it is not certain that they will treat those closures as priorities.

Unless a very strict work assignment process is implemented to ensure that the effort devoted to their closure is sufficient and addresses the most important Points requiring the most effort, the forecast of actual closure will be overly optimistic and delays in facility start-up will ensue.

In addition, if people have to devote substantial effort to Open and Punch Points management, one can generally observe that the productivity of this tedious work decreases over time, both due to the fact that harder issues get addressed later, and due to the decrease in motivation for this work over time, which tends to become considered as an administrative task.

More effective approaches to Open Point and Punch Point management

If the number of Open or Punch Points is quite high, managing them individually may not make sense. It can be more effective and more motivating to treat them in batches based on their characteristics. Such an approach may also help anticipate upcoming points by identifying common causes and feeding it back into the process to

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avoid further issues. Organising the resolution of Open or Punch Points as dedicated projects or task forces also enhances accountability and ensures that people are dedicated to their resolution.

As an example, all the Punch Points related to painting quality issues could be grouped together into a painting rectification project. In addition to addressing the Punch Points efficiently (e.g. developing an efficient process for rectification, implementing rectification campaigns solving numerous Punch Points in an effective manner) it could also identify the root cause and address it for future works (for example, the identification that damage is caused by subsequent unprotected use of some equipment close to finished works, and prevent this from continuing).

Another example for Design Open Points could concern certain systematic interaction issues between two disciplines (e.g. civil works and piping, or piping and HVAC). Instead of treating those one by one, they could be taken up in a dedicated project task force piloting the productivity of design rectification, assessing the root cause and preventing further Open Points from being generated.

Particular resolution projects should be planned and managed for the resolution of Open or Punch Points through calculation notes and similar justifications, which may require the mobilisation of a dedicated team of engineers from the designer and from the contractors working together in an effective manner. Managing all those Points in a similar manner and planning the workload of a dedicated team is a pilotable and effective way to deal with them.

Summary

The management of large quantities of Punch Points and Open Points on large industrial projects can become very tedious and cause significant delays in the commissioning and start-up of the facility. Traditional approaches using registers and individual assignment of Punch or Open Points to contributors have strong limitations when they become very numerous. It is then much more effective to

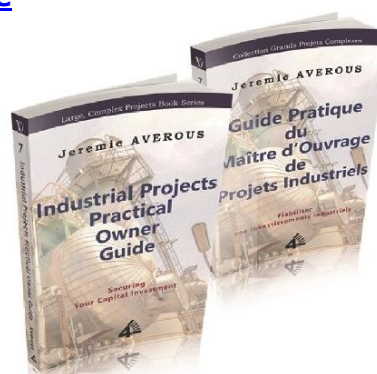
create a limited number of projects with dedicated and accountable personnel dealing with certain types of Open or Punch Points to accelerate resolution, identify and address root causes, thereby diminishing the future number of Open or Punch Points.

Hat-tip to Pierre Demonsant, founder of Planisware, for the idea of this White Paper based on a discussion on ticket systems for software service issues.

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Read the Industrial Projects Practical Owner Guide

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