Introduction to Project Health Control 02 Feb 2012

[A] Project Health [00:00]

Hello, my name is David Winter and I have some ideas about making projects work better. And I'd like to thank you for your interest in that.

Over the past few years its become my obsession to introduce a particular type of Project Control into the Energy Industries.

The methodology is calle Project Health Control, or PHC for short, and introducing it into the industry is not as easy as I thought it would be.

In fact, I conclude from the past few years' development of PHC, that effective introduction MUST come from implementation on a trial project.

What I'm doing right now is trying to find a project that I can join in a project coordination role, using PHC as a tool.

This presentation is a simple overview of PHC, intended as a brief and gentle introduction, to give you enough information, and the confidence, to introduce me (and therefore PHC) to your project.

This is a brief introduction to PHC to let you know what it is and how it works.

It takes about 25 minutes and concentrates on information that helps you to appreciate the basics of PHC.

No padding or sales rhetoric (on this occasion).

You might have to use the pause and rewind buttons to hear some things repeated.

References to documents and hyperlinks are given on the pdf mindmap chart that accompanies this presentation.

[AA] The Need for Project Health [01:27]
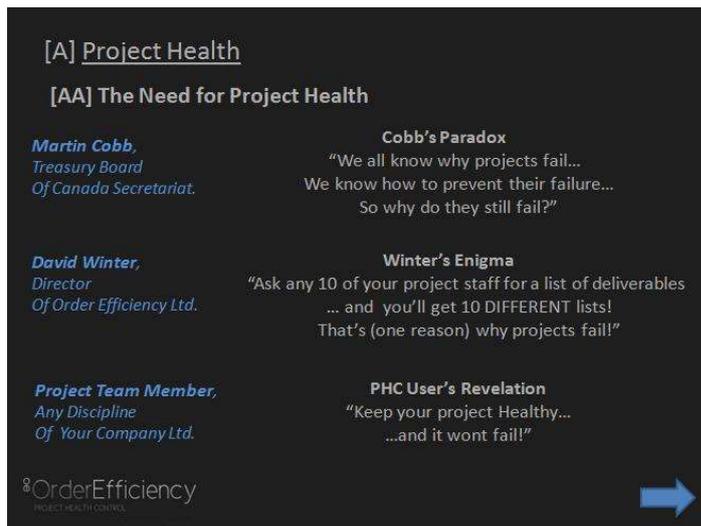
We'll start with a few relevant quotations.

[CLICK] First one by Mr Martin Cobb - introducing Cobb's Paradox.

There is a huge amount of information about project management techniques and plenty of tooling out there as well. All easily available. To help us make projects work.

We can all see from our own viewpoint within a project when something is not quite right.

We can all usually predict a failure from the 'writing on the wall'. Usually to do with a lacking or failing in OTHER people.

And that's my view on the key to Cobb's paradox. Projects fail because of OTHER people.

[CLICK] Second one is by me - introducing Winter's Enigma.

Its about definition of Deliverables.

From the moment a project is born, it begins to die. It becomes 'unhealthy' as the deliverables evolve over the project. New deliverables are born, some are closed, some become redefined.

Nothing wrong with change, but any changes in deliverables that belong to one project group, not being communicated to other groups is a big problem.

Multiply this by the number of deliverables in the project and there's the potential for a huge mess of conflicting information. The bigger the project the bigger the mess can be.

Projects fail because the right hand doesn't know what the left hand is doing and more often than not neither hand has the means to report problems to the project head.

[CLICK] The third quotation is a general, virtual, one, that could be easily made by anyone who has worked on a PHC driven project.

Very simple. Healthy project's don't fail.

[AB] What Makes a Healthy Project? [03:07]

So What Makes a Healthy Project?

The key to Project Health is visibility of status and transparency on problems that come along while working on the project's Deliverables.

So the primary object of attention is always the project deliverables.

[CLICK] First we identify and reconcile the various sources of information on deliverables (like the contracts, the plot plans, reports etc).

[CLICK]Then we organise and structure the deliverables into categories (or Deliverable sets). Any discrepancies are resolved and a central database of deliverables is formed for the sole purpose of status tracking and reporting. Project information remains where it belongs, in Project files and systems (like the schedule, chart of accounts, I/O Database etc). The PHC database is only for status reporting.

[CLICK] The Deliverables definition process is continuous as new deliverables arise, discrepancies are resolved and deliverables become completed.

[CLICK] Soon after the Deliverables are defined, the tracking begins using PHC Deliverables Tracker tools, one for each of the Deliverables types.

[CLICK]Trackers are added to the system as each Deliverables type becomes first established. Each Deliverable is assigned to a person.

[CLICK] Information directly from the point where the work is done, is used to communicate the status on trackers, directly from the people accountable for their own deliverable.

[CLICK] The whole picture on deliverables status being totally visible, allows effective priority setting, as the delivery plan is progressed using a three week rolling cycle (the week that's passed, the week we're in and the week ahead).

[CLICK] The Concerns Management system is established at the same time as the Deliverables trackers and is the place for issues that arise during the course of deliverables progress.

Concerns are built up in a heap, until common factors and key concepts that relate them can be established, forming the Concerns Categories and keyword groupings that make batch problem solving possible.

Each Concern is accountable to a person on the team and reporting on each concern is completely uninhibited.

[CLICK] Anything goes and nothing is taboo in the comments that come directly from the project workforce on each of the Concerns.

[CLICK] The PHC Concerns Management system works closely with the risk management function and helps with the collection of status information. Status of mitigating action for risks is exactly the same as it is for issues. A Concern in PHC is either an Issue or a Risk.

[B] Project Health Control™ [05:58]

[BA] The Handling of Deliverables [05:58]

So how do we handle deliverables in PHC?

[CLICK] Many people think of deliverables as a list of 'items' in a contract document that have to be ticked off before project completion.

That's true, but in PHC the concept of the deliverable is taken to an extreme. A tangible unit that we represent in a branching data structure that describes all things that the project has to make, do or achieve.

At its highest level there is just one deliverable. The physical manifestation of the project itself! (the gas plant, the DCS System, the building, the water treatment plant, whatever).

The next level down is the set of major components that make up the Project's geographical structure, and some logical sets of documentation as well.

There's a lot more to it than that but this is only an introduction.

Its probably enough at this point to say, that the deliverables structures are the key to PHC, and the deliverables structure seen by the Piping team looks very different from the structure seen from the point of view of the Accountant or the Legal team or the Electrical team.

[CLICK] PHC defines and continually refines the entire matrix of deliverables in the project and reports on status as deliverables move from not started, through to all stages complete, from phase to phase of the project through Feasibility right up to start-up.

[CLICK] Some deliverables live within a phase, others pass from one phase to another.

[CLICK] PHC doesn't care too much about division of the phases. It cares about the life cycle of each deliverable, from its conception to its completion.

[BB] The Handling of Concerns [07:37]

So how do we handle Concerns in PHC?
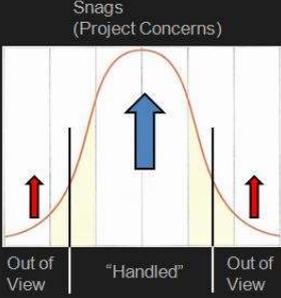
In practice, deliverables don't just progress nicely and problem free. In the real world there is a constant stream of snags or issues that arise from work on deliverables.

[CLICK] The curve is meant to show that the majority of problems that happen during work on deliverables tend to be handled by the project team. Because people on the team are seasoned, experienced experts who are each more than capable of doing their jobs.

[CLICK] But inevitably, some concerns arise that either can't be dealt with there and then, or need input from another member of the team. Everyone is busy and this kind of problem is easy to lose sight of, or even forget completely.

[CLICK] But beware of the build up of these 'off the radar' Concerns. In terms of the PHC Health metaphor we think of them as toxic foreign bodies. You need to know they exist, and you need to know to what extent they have built up, so you can organise effective treatment.

Every project has a stream of this kind of problem. But where do they go?

[BC] The Project Iceberg [08:42]

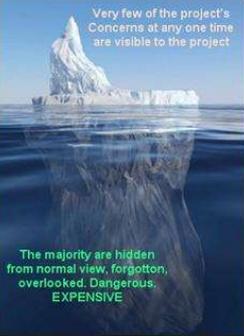Well, they go somewhere, that's for sure. The place for these odd Concerns that aren't just 'handled' locally we call in PHC the Iceberg.

[CLICK] The Iceberg metaphor is just a convenient way to illustrate the fact that there are many more 'odd' problems on the project that we can't see [CLICK] than those that we can.

One problem with the Iceberg metaphor though, is that our Iceberg isn't solid. Its fluid and these odd concerns come into and out of view as management turn their focus onto the 'fashionable' problems that the project team focuses on as well. Because they had better, because management will ask for status on these problems at any time and the project team had better be ready to respond.

[CLICK] PHC doesn't care about management pressure to favour one concern over another and it tries to make every concern visible and accountable and feeds back to management, information about the reality not the fashion.

[CLICK] Its interesting to see the reactions of people in the Project Team who see their own Project's Iceberg for the first time.

A common reaction is to bury it again. Many people would rather see the project bear the eventual cost than suffer the personal short term effects of their project's 'truth'.

Another reaction, that we like better, is 'realisation' that we've been burying our heads in the sand, and resolve, not to be doing that any more.

[BD] How It Works [10:04]

PHC is a people oriented methodology.

[CLICK] Everyone in the project team feeds the system with information on the status of the Deliverables, Concerns and Actions that he is accountable for.

[CLICK] The Project Team use PHC to monitor the project's status. They use information from the system to create and approve Actions that reduce the effect of Concerns.

[CLICK] And there are PHC specific staff on the project who do the job of continual analysis of the data, facilitate meetings and process comments from the Project Staff.

[CLICK] The tooling in PHC is a set of database driven dashboards that allows analysis, reporting and viewing of status information. And that allow collection of comments from staff on project Concerns.

[CLICK] The Concerns Management System is the heart of the PHC system that allows a view into the status of Deliverables, Concerns and Actions.

[CLICK] The Action Tracking System is a module within the Concerns Management System that allows actions to be defined, allocated to accountable staff and tracked to completion.

[CLICK] A Deliverables Tracker module is established for each of the Deliverables types. This segregation lets us treat each deliverables type differently as far as tracking is concerned. Tracking of a cable for instance involves a different set of stages to the tracking of a document or a weld.

[BE] The Hardware Platform [11:30]

The PHC system is entirely separate from the project's data systems. This is necessary to ensure that the PHC status database can serve as an effective regulatory tool for checking integrity of the Project's data.

[CLICK] The first action on a PHC implementation is to start a Concerns Management System on a desktop somewhere.

If the project is small enough then this can be the full extent of the PHC hardware platform.

[CLICK] But normally the platform grows to two or more PCs that access the data remotely from a server that holds the database centrally. Each PC has the software installed and connects to the central server using secure access over an internet connection.

[CLICK] This allows effective collaboration over any geographical distribution for the project.

[CLICK] There is another platform though, that allows any user to access project status information using a standard (free) internet browser through secure access to a central SQL database that mirrors the status database. Its viewed using a website coded in PHP (that's not to be confused with PHC).

The wider network is necessary to allow the means for project wide comment collection. Very important in PHC.

[C] Past Projects [12:52]

Project	Owner	Location	Main Deliverables Tracked	Major Challenges to Project Health
Bonga, subsea field development	Shell	Nigeria	Software Modules, PCs,	Software configuration control, materials tracking.
West Libyan Gas Production plant	Agip Gas	Libya	Loops, Cabinets	Use of resources, contract communications,
OKLNG, LNG plant (PreFEED)	Shell, NNPC, Chevron, BG	Nigeria	Business and policy documents.	External factors (political and fiscal) affecting the investment decision.
Connect Project, London Underground	London Underground Limited	London, UK	Railway stations, Power supply sources.	Unwieldy corporate procedures and processes. Management of resources.
Dung Quat Oil Refinery	Petrovietnam	Vietnam	Loops, Plant Systems, Cables, Cabinets	Coordination between functional departments.
USAN Subsea Manifold	Total	Nigeria	Design documents and reports	Team integration, document review cycle, company/client interface issues.
Zubair Oil Field Re-Development	Eni	Iraq	WBS Items for Schedule Risk Analysis	Political risk and logistics issues .

PHC is an extension of my own work pattern using tips and techniques that I have gathered over the years.

Also using tooling that I have developed to make it easy to manipulate the data. A combination of databases that I use is Filemaker for desktop use and MySQL for web access through web pages written in PHP.

I also use mindmanger and various other data processing and connectivity tools.

Each of my job placements over the past 12 years has served as a development platform for at least one aspect of the Project Health Control methodology.

Most of the implementations have been localised to the job I did in each particular setting. PHC applied to the work showed obvious improvement to the project as things seemed to get better around me.

Most of the implementations were done in some kind of stealth mode. Because its very hard to introduce something new into an established industry. Especially when the new thing is innovative and can be seen as a threat to 'normal operation'.

If you would like to know more about any of the implementations of PHC on any of the projects listed, please ask.

Maybe you have worked on one or more of these projects yourself. In which case it would be good to compare notes.

[D] Your Project [14:09]

I am looking for the next project to apply PHC in its current state of development.

I'm often asked what kind of project that PHC can be applied to and the answer is always very a suspicious 'any project'. Not the answer most people want to hear because it reminds you of the phrase 'Jack of all trades, master of none'.

But the fact is, that PHC doesn't interfere with its host project in any way other than to stimulate the flow of information.

Any project with deliverables (that's all projects) and the potential for snags during delivery (all projects), is a candidate for PHC.

Current target is the Oil & Energy industries, but that's only because this is my main area of experience. Enquiries from other industries are very welcome.

[CLICK] For an example of application here, I want to use a fictitious gas plant project. This is fiction, but based on a mixture of true stories.

I want to take you through how the principles of PHC would be applied on a Gas Refinery build, and touch on the difference between applying PHC and not applying it.

[E] The Shortest Path to Production [15:18]

[EA] The Natural Order [15:18]
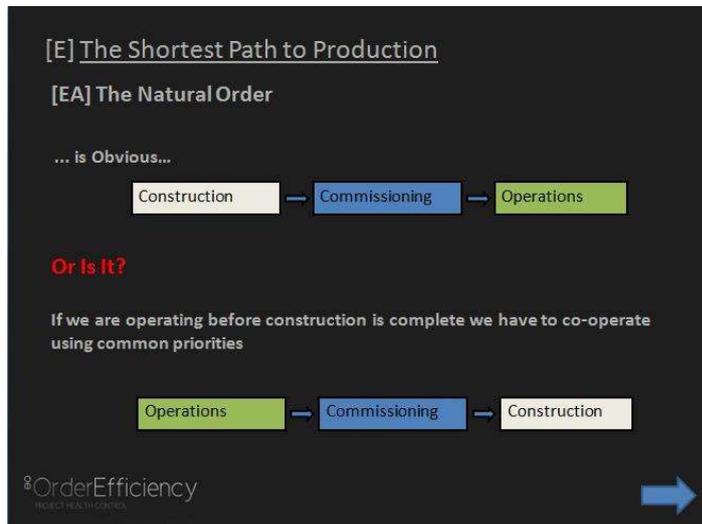
So, for delivery of a Gas Plant (any plant) it seems reasonable that you should build the thing first, [CLICK] then commission it, [CLICK] then hand it over to Operations.

That's how it used to be done but more and more now its being done in a different way.

[CLICK] The new trend is all about getting to first production.

[CLICK] Operations say 'Give us production'

[CLICK] Commissioning say 'Ok, well we need plant systems X. Y and Z to be operational then. But we're not yet mechanically complete!'

[CLICK] Then Construction say 'Well why don't you just tell us what you want? We'll construct how we normally do but make sure we cover the areas you want at the times you want'

Which also seems reasonable until you consider what that short cut to production actually means in terms of the rest of the commissioning and construction work.

Construction and commissioning going on with hydrocarbons in the plant. Now this slows the work considerably and leads automatically to the potential for the project to run on to an open ended extent, depending on the effectiveness of control of the work

In practice the plant is still constructed before its commissioned, of course. But in a production driven project its certainly operations that set the commissioning and construction order.

But how is it all controlled?

[EB] Deliverables Coordination [16:39]
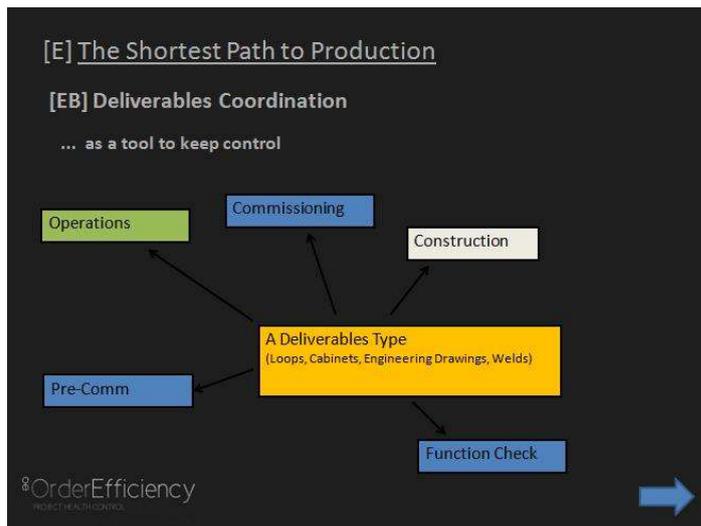
We use a Deliverables Type as a control tool.

Those Plant Systems that are required for achieving first production are well known, well in advance of when the systems need to be ready.

The order is known as well, for instance the water systems are needed first, followed by generation, instrument air and other utilities, then specific process elements and relevant parts of the safety systems.

What's not so well known is the status of individual components of each Plant System as the system is being brought to an operational state.

But its easy to track status if we have a system set up specifically for that purpose.

Every deliverables type can be used as a coordination tool.

Its the tracking of the deliverables types and keeping status derived directly from the point where the work is done, that keeps all the disciplines (or functional units) aware of the best thing to be doing at any time during the project.

[F] Strategy for Success [17:37]

[FA] Define The Deliverables [17:37]

So, how do we do it?

First is to define the deliverables.

[CLICK] Start focusing on Loops,

[CLICK] then related deliverable types, and the Data Model soon emerges.

The Data Model is a data structure that holds information related to status.

Available to everyone working on the project through the PHC dashboards.

Everyone has a chance to leave a comment on the system.

These comments are context sensitive, because they are related to specific deliverables.

What we've built in fact is a virtual pidgin hole system where there's a place to leave a message about the changed status of each and every deliverable.

The PHC analyst uses these messages (or comments) to update the deliverables status and to feed into the Concerns Management System.

So, having built the data model, we have to assign priorities.

[FB] Define The Priorities [18:37]

For our virtual project, there are 6 zones. Two of these include Plant Systems needed for first production.

[CLICK] These two zones reference 20 out of the whole plant's 260 systems.

[CLICK] And 983 out of the whole plant's 17,819 loops.

[CLICK] Cabinets, cables and individual tags were easy to identify from the priority loops.

[CLICK] This segregation of deliverables that are important for first production, is an ongoing process. The idea isn't simply to work on the deliverables identified, but to allow direction of focus. Its all got to be done, but with priorities set, and the full landscape of deliverables status visible, its easy to deal with problems that arise with deliverables as their time for completion and testing approaches.

The test order on most Plant Systems can be fully analysed several months in advance.

[CLICK] The main objective is to let commissioning and construction go ahead with their own planned work, but for Construction to be alerted well in advance to the needs of Commissioning.

Commissioning know what to test and in what order.

Construction prepare the way for Commissioning by mechanically completing parts of the plant that are common priority.

[FC] Plan Ahead [20:02]

The whole point of having the deliverables structure fully defined and set up for easy dashboard monitoring, is to allow effective forward planning.

PHC has at its heart several passions that drive it.

[CLICK] We minimise manpower standby, ideally to the point of elimination!

[CLICK] We minimise obstacles to progress of the deliverables.

[CLICK] And we give ourselves the best chance to deal with Concerns.

Problem solving in batches is the favourite.

[CLICK] And that partly involves applying lessons learned.

A lesson learned in a PHC implementation is a successfully dispatched Concern, that the system remembers, by tagging with keywords.

[CLICK] With total visibility comes the luxury of the opportunity to make strategic decisions as opposed to having decisions made for us by the circumstances of a failing project.
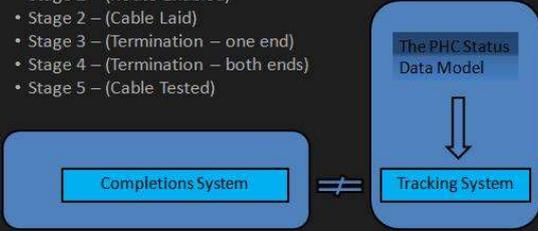
[FD] Track To Completion [20:54]

A project exists in the first place to ensure delivery of the deliverables.

Arguably this is the 'only' reason for running a project.

The project will have some kind of completions system.

A PHC implementation is not intended as a completions system but it could be used as a rudimentary one.

The purpose of PHC deliverables tracking is to allow a comprehensive view on how complete (or how 'delivered') the deliverables are.

[CLICK] In the case of cables, we track through 5 definite stages.

[CLICK] The completions system is based on record of certificates. The Completions System is interested in what is done and what's not done.

[CLICK] The PHC Data Model is a status monitor based on information (or indication) from the point where the work is actually done.

[CLICK] The Data Model IS NOT the Completions System. It is a live dynamic representation of the 'state of completion'. There's a difference.

PHC gives us the chance to drive that completion, based on visibility of what's progressed and what hasn't, through the whole lifecycle of the deliverable. Not just at the end.

[G] See the Future! [22:07]

[GA] The Project WILL be Completed [22:07]

One way for the project to proceed, is to let it happen. Ignore the Project Iceberg and tackle problems as they arise.

The project will finish EVENTUALLY. The question is always, 'is EVENTUALLY good enough? and how much wasted manpower is acceptable?'

[CLICK] Commissioning and Construction working together using Weekly (or Daily) meetings to resolve problems.

[CLICK] And Operations wait patiently for their plant.

[CLICK] There IS another way.

[GB] As It Could Be – The Way Forward [22:40]

Form a Project Health Monitoring System.

[CLICK] With Deliverables lists, extending to all deliverables types.

[CLICK] A formal process for tracking status.

[CLICK] A Concerns Management System in place

[CLICK] And the Deliverables driven into the Completions System

[CLICK] Commissioning, Construction and Operations all working together using a common Data Model in a downward spiral of confusion. And an upwards spiral of clarity, where the end of the project would accelerate to a crisp confusion-free finish, instead of lumbering to a sluggish end full of loose ends and problems that the Project owner usually ends up buying along with the plant when he finally signs.

[GC] The Next Steps [23:30]

So what happens next?

[CLICK] I am asking you to see the future of one of your projects and I'm asking you to declare it a trial project for the implementation of PHC, in a fully supported environment. Supported by management that is.

[CLICK] I'm asking you to reserve two roles, an Interface Coordinator role and a Risk Engineer role, for two people who can bring a PHC implementation to your project.

[CLICK] One of them will be me and the other one will be someone I recommend. One of the people who have followed the development of PHC over this past few years.

[CLICK] If we get the chance to show you how PHC can work on your project then there's a real opportunity to bring your project in early and under budget.

Thanks for listening this presentation on Project Health Control.

If you're curious about putting PHC to the test, I'm here to take your call