



# Managing Change on a Capital Programme

Back to Basics

# Context of Change

**NEEDS**

*why do we need to manage change?*

**ORGANISATION**

*what are the organisation requirements?*

**STRATEGY**

*what is the strategy for managing change?*

**CONTROL**

*how do we control change?*

**OPPORTUNITIES**

*how do we manage opportunities (+/-)?*

**RISKS**

*what could possibly go wrong?*

# Meet your CLIENT



This is Andrew. He is CEO of a business that **NEEDS** capital investment to deliver for its customers.

Andrew's performance is measured on the benefits he brings to customers.

Andrew knows roughly what benefits he has to deliver.

His regulator, or his customers and marketing team tell him.

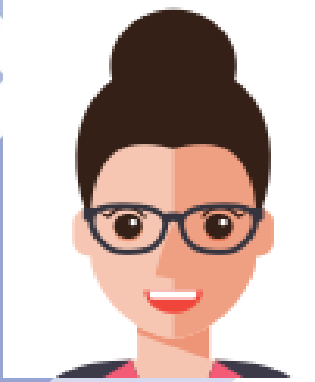
He has established some initial requirements to deliver those benefits.

He now needs to know some options:

- What benefits (including discounted cash flow and the cost of borrowing money) will each bring?
- When can each be delivered?
- What investment is needed for each option before benefits accrue?

Andrew and his board approve funding to engage a **PROGRAMME TEAM** to work up options.

# Meet your FINANCIAL DIRECTOR



Meet Janet.

Janet has to make sure the organisation does not commit to spending what it does not have. And to make sure any investment is worthwhile.

Janet knows she cannot approve funding for everything Andrew wants. She has to justify to Andrew what investment the organisation can make. Andrew's bonus is affected if he does not make performance targets. But if his organisation goes bust then he is out of a job. So he listens to Janet. He needs to consider changes to requirements that affect the baseline. Janet needs to see the year-on-year effect of each change to requirements. This is because her customers can only supply so much funding per year.

# Meet your PROGRAMME DIRECTOR



Here's Beth.

Beth's job is to turn Andrew's requirements into scope, time and cost. And if funding is approved, manage delivery.

At the moment her programme has pretty much finalised an option. She even has a Performance Measurement Baseline for the preferred option. Requirements, Scope, Schedule and Cost are linked by common WBS. But her programme has not yet got funding. Beth's organisation's is planning investment for the next 10 years. Janet has told Andrew the programme may not be affordable. Beth needs her delivery team to sign on to changes to the baseline. Beth needs a controls ORGANISATION to help.

# Meet your CONTROLS TEAM



Charles's job is to manage change on the programme. He knows each change has to have scope, cost and schedule evaluation. He has to tell Beth the effect of each change so that FD can be assured the programme is affordable. He is the CHANGE MANAGER.



Davinder's role is to work with the delivery teams to establish the schedule effect of any change to requirements. We normally call him the PLANNER. He knows how important it is to use the WBS and code the schedule carefully to place each activity in the right planning package.



Emma has to co-ordinate tracking RISKS and OPPORTUNITIES to the planned spend profile. She works with the delivery teams to surface those. If risks are properly understood, the programme will get FUNDING for them. She is the RISK MANAGER.



Faisal knows a lot about data. He makes sure all the reporting sources are complete and accurate. He is ace at interpreting the data and helping delivery teams and Beth understand where the project is. He integrates the cost of each change with the schedule. He is REPORTING MANAGER.



# Your Programme Controls Manager



Helen values people, process and technology. She has struck a deal with the commercial director, where Davinder and Ed will work closely together. Davinder doesn't want to cost load the schedule, because it's a lot of work, and cost isn't his bag. But Helen knows Faisal can help.

## And some other players...

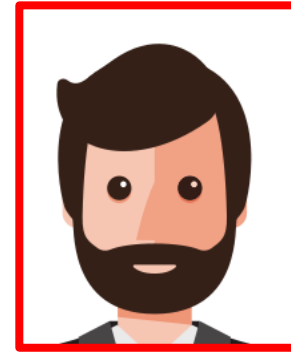
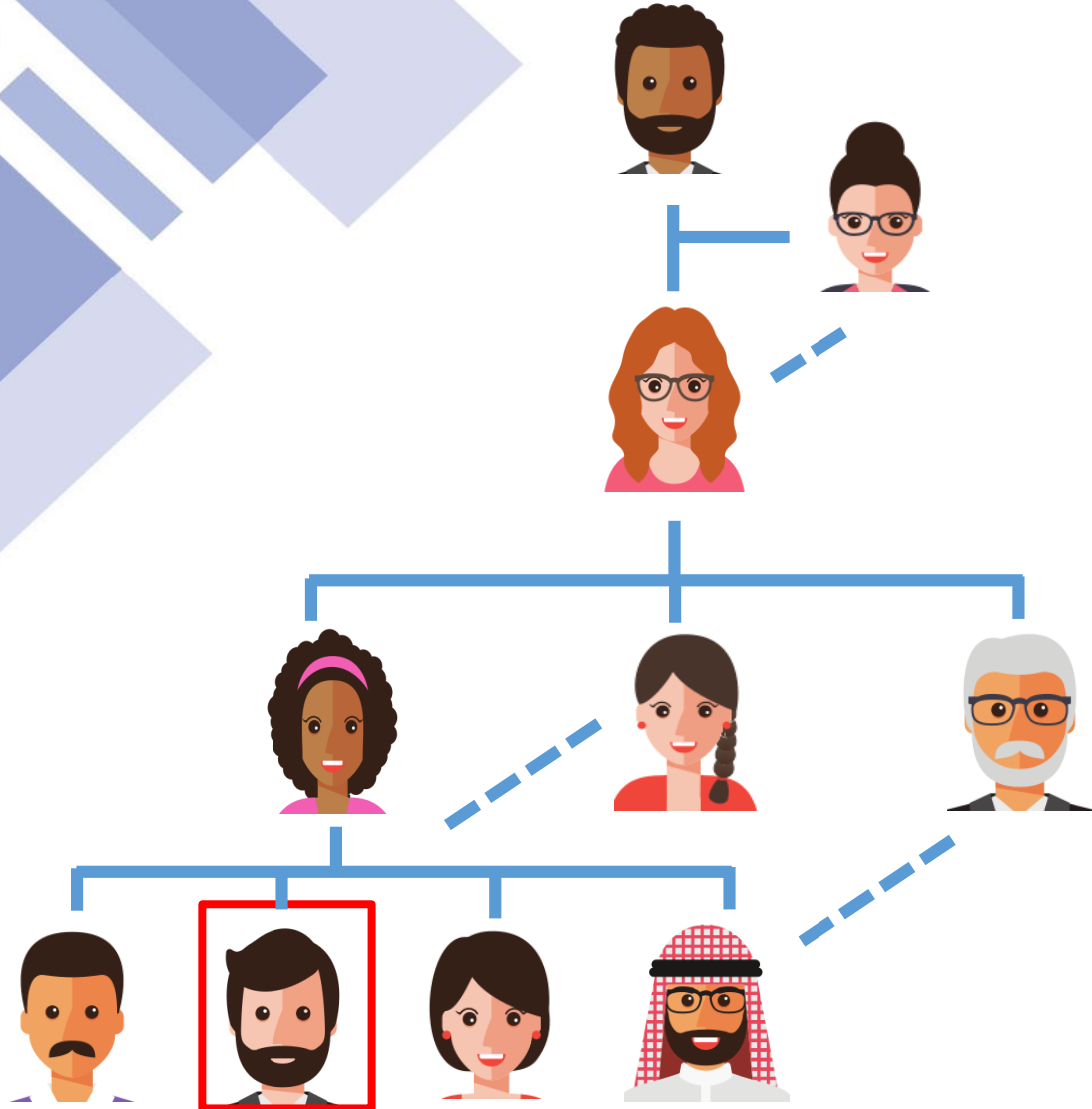


Ingrid is one of the delivery managers. She has a PLANNER and COST ENGINEER to help manage schedule and cost on her sub-programme. But she relies on Helen, Davinder and Faisal to pull everything together and tell her where she is.



Grant has been around a long time. He can evaluate the direct cost of each change. But he doesn't really work for the CONTROLS team – he reports to the commercial director. He often has to produce an estimate before there is a WBS. But without the schedule he can't estimate the effect of INFLATION.

# The ORGANISATION



Charles has quite a job to get all these people on the same page. He needs a STRATEGY for considering change.

Fortunately, his Programme Management Office have established guidelines for each programme to work within.



# The STRATEGY for Change

Change Control on a Capital Programme is there to manage budgets and value for money. Before expenditure is approved, most Clients require a programme to seek 'Sanction' from the executive board.

The following funds are usually separately treated within an expenditure Sanction for a set of defined benefits (and therefore scope – at least outline scope)

Programme Management  
Direct Costs, including Design and Delivery  
Risk  
Estimating Uncertainty  
Indexation

INCLUDED IN PERFORMANCE MEASUREMENT BASELINE (PMB) AND  
PROGRAMME HAS AUTHORITY TO MANAGE WITHIN THIS LIMIT  
SUBJECT TO PROGRAMME BOARD AVAILABLE TO DRAW DOWN  
ONLY AVAILABLE FOR PROGRAMME TO DRAW DOWN BASED ON  
AUTHORITY OF THE EXECUTIVE BOARD

This gives rise to the so called 'Delegation of Authority'

Executive Board



Programme



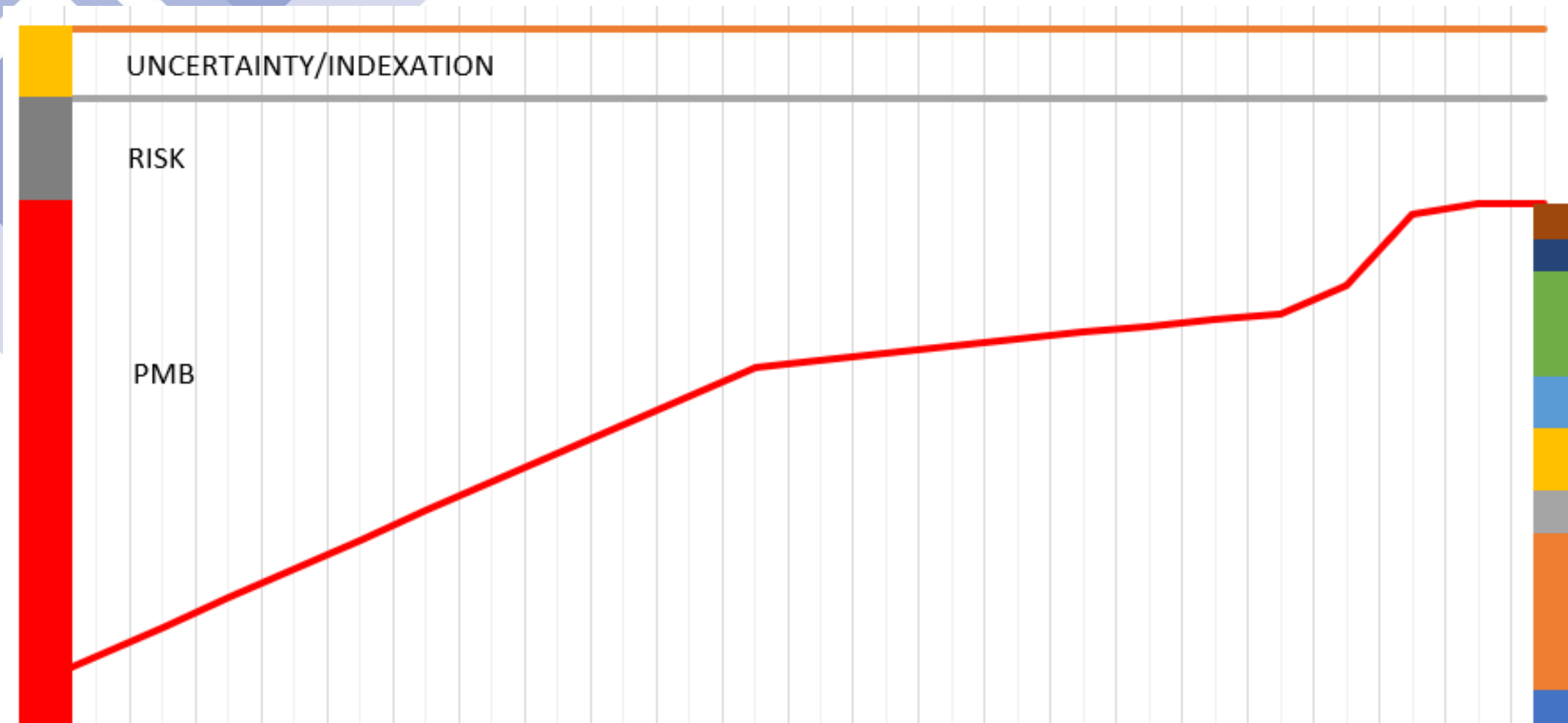
Project Managers



# The STRATEGY for Change









**LOGIKAL**  
Project Intelligence



Sanction EFC PMB

# CONTROLS – the Change Process

Step	Change Board 	Chg Manager 	Estimator Cost Mgr 	Controls Manager 	Planner 	Reporting Mgr 
Identify the change and log the request		✓				
Evaluate the scope, cost and schedule effect			✓		✓	✓
Identify level of approval needed				✓		
Approve/reject/recycle the change	✓					
Implement the change to the baseline				✓		✓

Change within 1 project not affecting programme EFC – PM

Chg>1 project OR affecting EFC but within Sanction minus Uncertainty/Indexation OR RISK Drawdown – Programme Manager

Change affecting EFC outside Sanction OR converting Uncertainty/Indexation to Risk or PMB – Executive Board

# A Scenario - 1

Reduce expenditure over next 3 years, but maintain benefit delivery date at now+6 years.

Three opportunities have been identified by VALUE ENGINEERING to deliver similar benefits for different scope.







Some activities can be deferred out of the next 3 years, but this will increase indexation and estimated final cost (EFC), and delay the start of implementation.

A different implementation strategy has been identified to save time in years 4-6 but it will be more expensive and more risky.

Charles logs these as 5 separate changes, because Janet, the FD, does not know yet how much this programme has to save.

She needs all programmes to do this exercise, and may not need to take all 5 changes.

If she could – she would keep current delivery strategy – any change to the EFC and spend profile may need a revisit to the business case for each programme.

Step	Change Board 	Chg Manager 	Estimator Cost Mgr 	Controls Manager 	Planner 	Reporting Mgr 
Identify the change and log the request						
Evaluate the scope, cost and schedule effect			✓		✓	
Identify level of approval needed				✓		
Approve/reject/recycle the change	✓					
Implement the change to the baseline				✓		✓

# A Scenario - 2

## Schedule Impact Analysis

The Value Engineering opportunities do not change activity timings – only cost, in this case.

Davinder produces a ‘what-if’ schedule (or reflection in P6, if appropriate) for:







- a) – the deferral of some activities to start after year 3
- b) – the revised implementation strategy

After much ‘to-ing and fro-ing’ with the delivery teams he has a solution that delivers benefits on time.

Some activities are no longer required – Davinder ‘retires’ these so that activity ID duplicates are not required.

Each activity is ‘weighted’ for input into the cost control solution. There are new activities which must be weighted, and weights from old activities should be redistributed.

Davinder passes the schedule output to Faisal, the reporting manager for integration with cost.

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Approve/reject/recycle the change	✓					
Implement the change to the baseline				✓		✓

# A Scenario - 3

## Cost Impact Analysis

Grant produces a revision of the estimate.

Each change for value engineering is cross-referenced to:

- An 'Omit' or negative quantity for the scope item that is removed
- An 'Add' or positive quantity for the new scope item







The change for revised implementation strategy contains:

- A 'cross the board' increase ('Add') in implementation resources
- An increase ('Add') in temporary material costs

Grant can identify each item in the estimate to a change – both add and omit.

But he cannot evaluate indexation because he does not know the timing of each of the activities that relate to the adds and omits.

And the breakdown of his estimate items does not match activities in the schedule.

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Approve/reject/recycle the change	✓					
Implement the change to the baseline				✓		✓

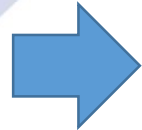


# A Scenario - 4

## Integration and Effect of Indexation

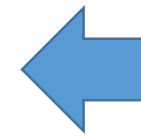
### Cost of Omits per WBS element

Item 1	£ 5000
Item 2	£ 65000
Item 3	£ 30000
TOTAL	£100000



### Original Activities in WBS Element

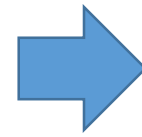
Activity a	20d – weight 20000
Activity b	15d – weight 15000
Activity c	30d – weight 30000
Activity d	35d – weight 35000
Total	100d



- The WBS element must have a reasonably uniform rate of production or cost per day
- Do not mix design and delivery WBS elements into one 'group'
- OK if you do not need to track the time-phased effect of each change, just the aggregate

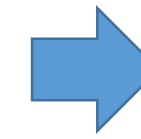
### Original Activities in WBS Element

Activity a	20d – Mar 22
Activity b	15d – Apr 22
Activity c	30d – Jun-Jul 22
Activity d	35d – Aug-Sep 23



### Periods

Period 1	£ 5000
Period 2	£ 7500
Period 3	£ 15000
Etc	









- Index for each period gives indexation cost for WBS element, over time
- Need to divide activities into periods – normally years
- Ideally needs a query or a database

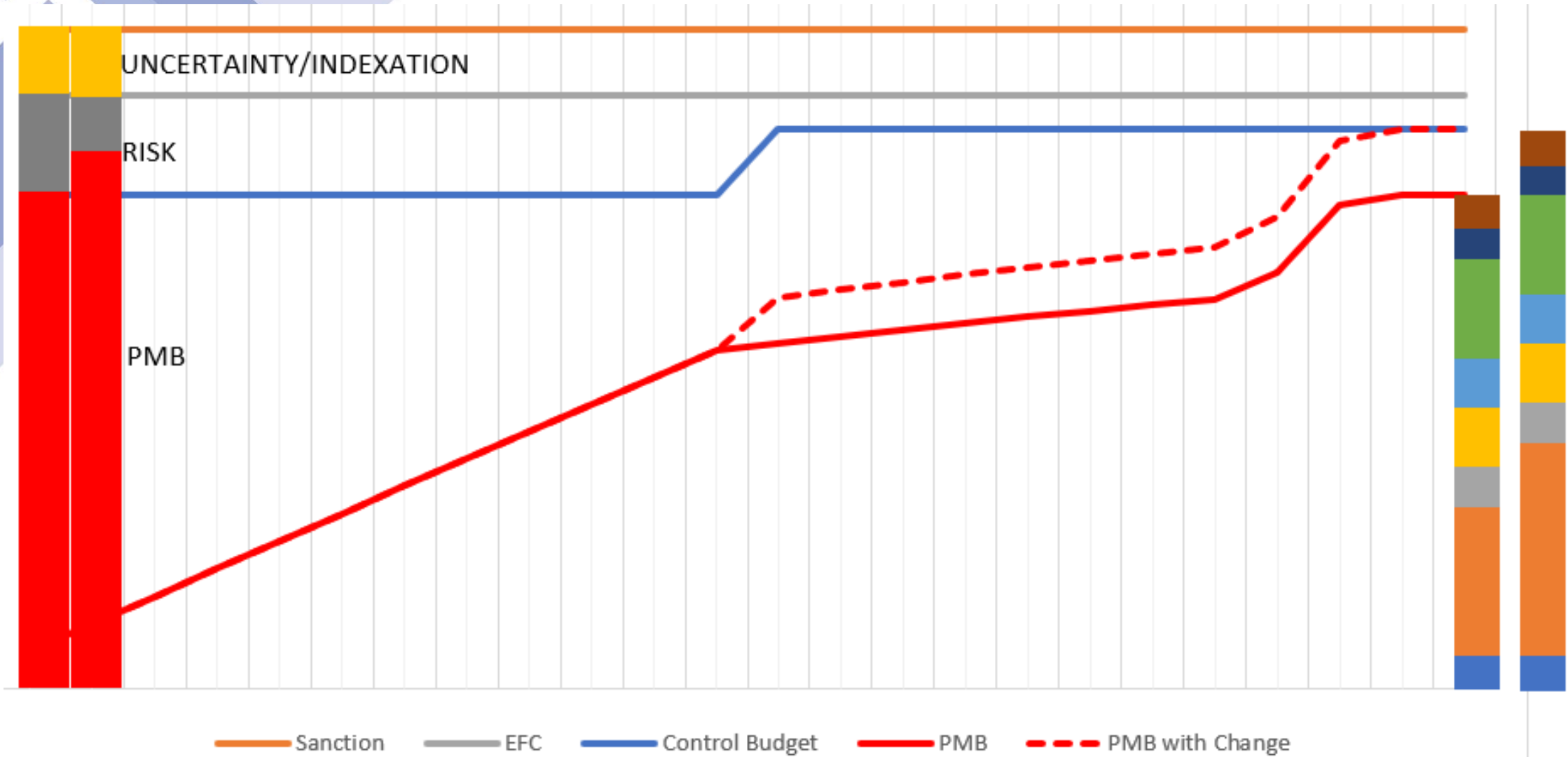
Faisal can evaluate weighting for each activity, and indexation for WBS element.

This can be integrated into the cost management solution.

Time-phased effect of each change really requires a database or specialist solution

Step	Change Board 	Chg Manager 	Estimator Cost Mgr 	Controls Manager 	Planner 	Reporting Mgr 
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Implement the change to the baseline				✓		

# OPPORTUNITIES and RISKS



# GOTCHA - 1

## Managing the stakeholders

- Make sure all the providers of data – planner, estimator, cost manager etc – know the timetable for each change.
- Do not bring anything to change board which has incomplete data.
- Keep an up to date change log and action list and bring that to change board.
- Make sure all the approvers have verbally confirmed ‘no objection’ or ‘discussion required’ before change board.
- Remember that after approval the change still needs to be implemented – some stakeholders will look to get ‘implementation’ actions as ‘approval’ actions to ensure ‘proper’ implementation, so...
- Be prompt and efficient with implementation actions and make sure changes approved at one board are implemented by the next.

# GOTCHA - 2

'Change' which is not really change

- A change is an identifiable difference between a set of configured items:
  - Benefit dates
  - Estimate versions
  - Requirements versions
- A change affects BASELINE documents – it probably also affects FINAL COST and PHASING, but...
- A change which asks for an increase in cost without corresponding scope change is NOT a change – it is a cost variance and the baseline should not be changed.
- A change which alters schedule dates due to productivity variations is not change – it is a schedule variance and the baseline should not be changed.

# GOTCHA - 3

Territory and structure disputes between finance, commercial and controls

- Often the estimator will report to the commercial function – not controls.
- Mostly the estimate is in a different (sometimes very different) structure to the schedule.
- Keep the Work Breakdown Structure as the governing structure for estimate and schedule.
- Map estimate costs for each WBS element to the group of schedule activities for each WBS element to give a weighting.
- Remember that finance colleagues will have data requirements.
- Ensure that there is only one source of truth for costs forecast and change – preferably the cost management solution – not the schedule, or finance system or ‘skunk works’ spreadsheets. The forecast from the cost management solution should feed the financial system. Make sure all data, including change data, satisfies all stakeholders.

# GOTCHA - 4

## Change on change without approvals

- Change 100 affects scope items A, B, C: C = 100m<sup>3</sup> of concrete, with change C adding 10m<sup>3</sup> @£100/m<sup>3</sup>
- Change 101 affects scope items C, D, E: C is changed from grade C30 to grade C40 concrete (adding £5/m<sup>3</sup>)
- Change 102 affects scope items C, F, G: C has different finish adding £2/m<sup>3</sup>
- How to evaluate the effect on both changes on C for approval purposes, whilst attributing a cost to each change, bearing in mind change may not be approved?
- Answer 1
  - Evaluate from a fixed 'control budget' – change 100= £1000, change 101= £500, change 102= £200
- Answer 2
  - Evaluate in the order they are raised – change 100 = £1000, change 101 = £550, change 102 = £220



# GOTCHA - 5

Finance want to see the time phased effect of each potential change, including indexation

- This can be a lot of work, even for a medium sized change.
- Effect of each change has to be translated from estimate items to activities to time-periods (normally months or 4 weekly intervals).
- Without prompt change approvals, or a solution that integrates estimating, schedule, cost control and change, tracking change on change (especially over time) becomes very difficult and time-consuming.
- Approval order may well make a difference to the final amounts depending on how change is evaluated for approval.
- If this is required, use a specialist solution or....
- Be prepared for a lot of data manipulation using expert excel users – more than one!

RECAP

NEEDS

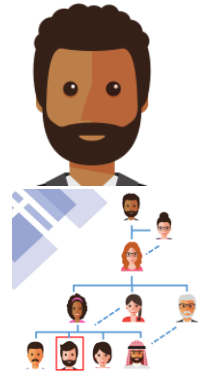
ORGANISATION

STRATEGY

CONTROL

OPPORTUNITIES

RISKS



Customers/shareholders and/or regulatory requirements drive the CEOs investment decisions – and priorities and needs change often

Programmes have to be delivered by people – in a structure or operating model



Managing investment needs a strategy for dealing with change – normally within a delegation of authority



Before change is approved it must be evaluated for its impact but try to use a simple evaluation process



Use the change control process to manage opportunities or risks into the performance measurement baseline

Watch out for: managing the stakeholders, change which is not change, territory disputes between finance, commercial and controls, change on change, tracking the time-phased effect of each change