

Preparing the budget

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1 Synopsis

Organizations require certainty when it comes to the financial performance of project execution. This can be required to determine profitability for general contractors or the total cost of delivering and funding an asset for owners. Projects teams are frequently left to invent data structures and processes based on previous experience and project data is often isolated in spreadsheets or point solutions and not available for portfolio level benchmarking.

The InEight solutions provide an integrated and connected platform that enables standardization of processes around project cost performance and collection of data. This structured approach enables collection of portfolio data in such a way that allows for efficient collection and insight.

This document outlines considerations and recommendations for the preparation of a project budget for implementation in InEight Control. It also covers several specific configuration options when publishing the project budget from InEight Estimate to Control. It is intended to assist with the preparation of standard operating procedures for the preparation of budgets for use with InEight Control.

2 Introduction

The project budget represents the total cost of delivering the required business outcome represented by the project scope. For owners this represents the funding and cost of delivering and potentially maintaining an asset, where for a general contractor this is the profitable delivery of project scope. The project budget is typically created on project initiation after a process of estimating the required budget against the initial project scope.

For the purposes of implementation in InEight Control, the project budget is a hierarchical decomposition of the project scope represented in terms of budgeted cost. This cost is broken down into detail that allows the project team to monitor and forecast project financial performance. This structure is called the Cost Breakdown Structure (CBS) and it consists of budget at the lowest level (terminal cost items), summary data at parent levels (superior cost items) and culminates at a single summary project cost item at the highest level.

Estimating processes and tools often do not provide the project budget in a format that enables tracking, forecasting, and reporting through project delivery. Estimating techniques and structures are typically used to provide efficiency to the estimating process but may not deliver budget detail in a format that enables the many external interfaces of the project budget.

On project initiation the estimate must be reworked into a CBS that takes into consideration these external interfaces. This process of preparing the budget is called 'conforming the budget'.

Projects teams are frequently left to invent data structures and processes based on previous experience. Often a new project team will bring with it previous practice and implement without consideration of the organization's requirements. Portfolio performance is then difficult to gauge when projects are not tracking performance in a consistent fashion.

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The InEight solutions provide an integrated and connected platform that enables standardization of processes around project cost performance. In this context the project budget sits at the heart of the project and organization data structure and must enable efficient data capture and reporting. Development of standard operating procedures and establishing a data structure that enables performance tracking across a portfolio is a critical requirement of successfully implementing and maximizing the benefit of the InEight solutions.

This document provides guidance on the context of the project budget, related systems and processes and some specific guidance on preparing the budget for implementation in Control. While it assumes largely that InEight Estimate, Control, Contract, Plan and Progress are being utilized the guidance suits partial use of the solutions.

3 Business Outcomes

A properly structured budget supports the following business outcomes:

Analytics and insight

- Portfolio and project analytics
- Reduced time from data capture to insight

Consistent approach to project controls

- Project teams do not need to invent process and can focus on project execution
- Consistent and centralized project reporting

Risk mitigation

- Standardized and centralized data and reporting – risk is not hidden
- Reduced time to insight enables early intervention/corrective action

Efficiency in data capture

- Capture once – use many times
- Validated data entry reduces error
- Structured data increases accuracy and value

Benchmarking

- Historic data available to benchmark project performance and estimating rates

4 Budget Requirements

The following sections describe the related processes and considerations for determining the level of detail to be included in the budget, but the fundamental questions that need to be answered are:

- What is the minimum level that cost performance per unit of measure required?
- What is the minimum level that project forecasting will be carried out?

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This will determine the level of detail to be included at the terminal level of the CBS where budget, actual cost and quantity will be recorded. Often it is assumed that more detail provides better insight, however careful consideration is required on the level of detail and the overhead required to capture actual data.

4.1 The Estimate as the Data Source

As described above, the project budget is typically derived from an estimate of project costs that reflects the project scope and structure at the time of estimating. There are several factors that could impact the need to and degree of conforming that the estimate requires during the preparation of the budget, such as:

- Estimating methods encourage efficiency in estimating and the business requirements for bid review, not project cost control. Level of detail and cost types may need to be regrouped for cost tracking
- Estimates can include values calculated on a percentage or spread that need to be tracked as discrete cost in project execution. These items need to be recalculated and represented as discrete cost items
- The estimate may be based on units of measure that do not reflect the project execution and performance measurement requirements
- tender take-off quantities structure, cost types, quantities and units of measure will need to be conformed to the requirements of project execution and related systems.

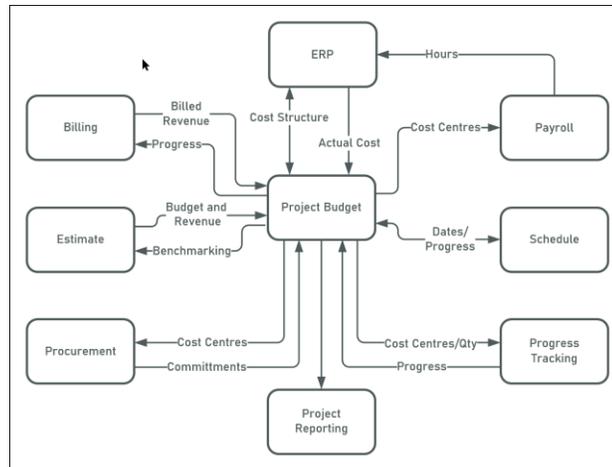
This document contains a number of specific considerations for preparing a budget from an estimate calculated in InEight Estimate, however the process is the same if the budget is prepared using any other estimate data sources such as Excel.

4.2 Related Processes

In an integrated project controls solution, the project budget sits at the heart of a series of related systems and processes. The balance of these relationships will determine the level of detail that can be tracked or is required in the project budget.

The following diagram and supporting detail describe the relationships with the budget that are considered when establishing the budget structure and level of detail:

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4.2.1 ERP

The ERP is the system of record for financial transactions for an organization. As such it determines the resolution and requirements for the tracking and reporting of actual cost transactions for the project. The WBS Phase code is used to map terminal cost items to cost objects within the ERP which act as the actual cost collectors. .

Configuration and mapping between the ERP cost objects and the cost items in Control will be determined during the process design stage of the implementation. When preparing the project budget, phase codes and the resolution and type of cost items will need to be consistent with the configured integration of data between the systems.

4.2.2 Procurement

Procurement and subcontract commitments raised on the project need to be allocated against the relevant cost items in Control through WBS phase code allocation and the contract line item.

Consideration needs to be given to the level of detail required in the budget on committed cost and cost performance:

- Does cost performance and forecasting need to happen at the level of individual contract commitments or is it appropriate for many commitments and un-committed cost to exist against one cost item?
- Is forecasting required at the contract line-item level, or the contract level?
- Is there a need to identify contract variations in the project budget?

These decisions in turn determine the level of detail required in the project budget. Starting budget may also only have total procurement budget in a single cost item which is then broken out as a procurement strategy for the project is formulated.

4.2.3 Payroll and Equipment Costs

Man- and equipment-hours are tracked at the terminal cost item level in the CBS. These hours are costed via payroll or external systems and then the cost and quantity of these hours are passed back to Control as actual cost. For self-perform works the terminal cost items is the lowest level that resource performance can be measured which is a primary source of productivity benchmarking data.

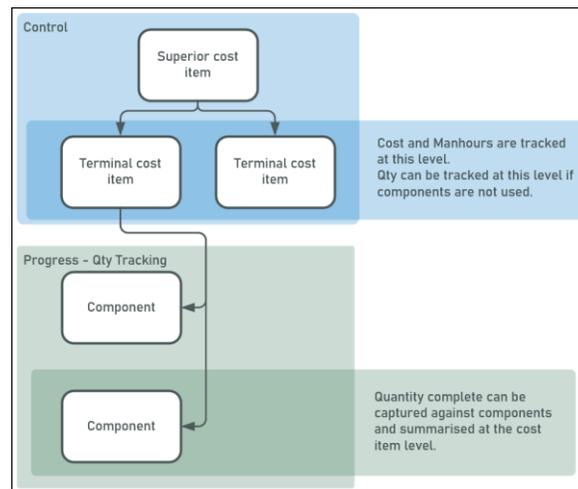
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Tasks will appear on the timesheets for foremen or operational resources to record their time, so level of detail and description should be meaningful to the users at that level. This detail needs to be appropriate to the level of effort required to capture data. For example if supervision is required to split a shifts hours across too many tasks data captured is likely to be inaccurate.

4.2.4 Progress Tracking

Quantity complete must be periodically recorded against the cost items to inform project progress, earned value and other calculations (such as CPI/SPI) and to enable some of the available forecasting techniques in Control.

Quantity tracking can occur either directly in Control or against the further breakdown of the CBS quantities as components in Progress.



The decision to claim in Control or Progress is based on the cost item type and data source for qty claiming.

- Progress allows for either the claiming of quantities directly into the Qty Tracking view of the web application or for field crews to track daily quantity measured as complete in the field.
- Claiming of qty direct in Control would be reserved for cost items where qty complete is managed as part of the budget/forecast process such as weeks complete for indirect site costs, or % complete for procurement line items.

In both cases Progress tracking is enabled through proper allocation of quantity and unit of measure for cost items that is meaningful to the progress of the task.

4.2.5 Billing

For contractors project margin is difference between revenue and cost. Generally direct cost items contribute towards the physical progress of the project and therefore to the earning of project revenue. Indirect costs are spread across the pay items. Mapping of direct costs to pay items can be established in Control through the cost item to pay item allocation and earning rules.

Consideration needs to be given:

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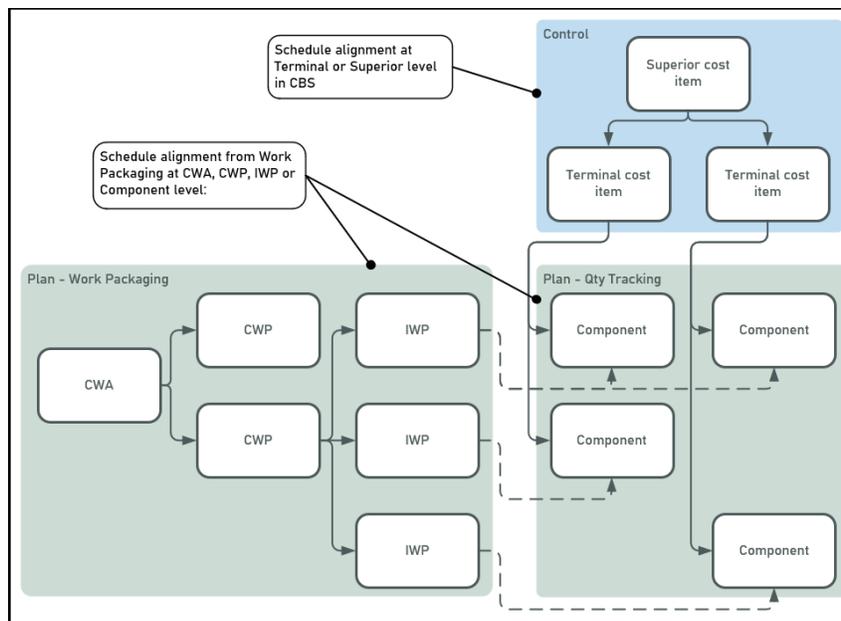
- to the contract type which drives the method of revenue earning, and therefore the pay item type: fixed final price, cost plus or unit rate
- the contribution of cost items to pay items (earning rules)
- establishing pay item cost, qty and unit of measure per the head contract requirements

4.2.6 Schedule

To enable time phasing of budget and forecast data as well as Earned Value Management, Control requires schedule start and finish dates for cost items in the CBS. In Control it is possible to track schedule dates at a rolled-up level, however for time phasing of budget data these dates are required against the terminal cost items.

For most projects, the project schedule utilizes a Work Breakdown Structure (WBS) that reflects the construction methodology and requirements for tracking of project completion. This does not always align with the requirements of cost tracking due to the number of the external interfaces of the project budget as highlighted in this document.

In Eight Control and Plan have structures that similarly reflect these requirements that are linked using Components in Quantity Tracking.



Schedule dates can be updated into Control through either the upload of .xer files or the import of schedule dates directly into the CBS. For either method the project must be able to align the Schedule WBS and CBS for the project in sufficient detail to provide start and finish dates for the terminal cost items.

Generally scheduling of Components as the lowest level in the project WBS is the best scenario for providing the required dates for time phasing in Control as well as using qty complete captured in Plan to progress both the project schedule and budget.

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4.2.7 Reporting

Internal and external stakeholders rely on project reporting to clearly establish project progress and performance. Project reports provide insight into status and trends and allow the early identification of issues to maximize the opportunity to mitigate risk.

In some cases, project reporting is unique to the particulars of the project, however all projects will be conducted within an organization level context and will require standardized reporting at that level. In either case reports and dashboards are configured to provide insight based on structured underlying data.

While preparing the budget consideration must be given to the project reporting requirements and data structures required to succeed. During project execution change and the capture of actual progress must also be managed as required for project reporting to provide accurate results.

4.2.8 Benchmarking

The InEight solutions provide the ability to accumulate portfolio level performance data over time. This data can be utilized to provide benchmark performance evaluation utilizing data structures such as Account Codes (these are not the General Ledger Accounts, but a standardized series of activity codes such as those published by CESSM). Account codes can provide insight to activity performance within the current project, across the portfolio and also provide feedback to estimating teams on actual performance.

Consideration needs to be given to cost item design, to not only provide cost performance data at the cost item level, but to also match the requirements of account codes in terms of contributing cost type (e.g labour, equipment, or procurement) as well as unit of measure.

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5.1 CBS Structure

As defined in the introduction, the project CBS is a hierarchical decomposition of the project scope represented in terms of budgeted cost, which has budget at the lowest level (terminal cost items), summary data at parent levels (superior cost items) and culminates at a single summary project cost item at the highest level.

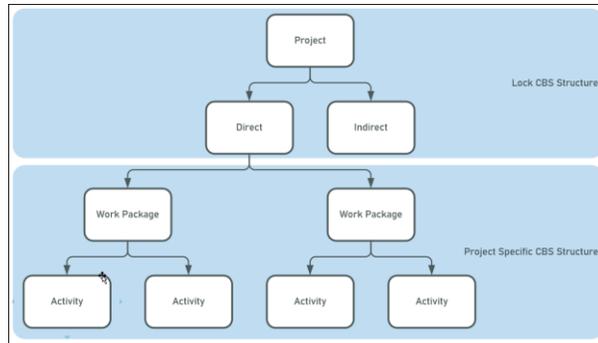
The terminal cost items are expressed in terms of budget cost, quantity and units of measure that are relevant to the execution of the project scope and may also include budgeted manhours.

Examples of CBS structures above terminal level are:

- Breakdown by project phase or area/location
- Breakdown by direct/indirect cost
- Breakdown per project deliverable
- Breakdown per head contract separable portion

It may be beneficial to develop a fixed top level CBS hierarchy to provide consistency across a portfolio. Project can be then provided with the freedom to create project specific structure below the set structure. An example of a level 2 locked CBS structure might be:

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5.2 Terminal Cost Items

The terminal cost items are where the budget lives and cost performance are measured. Project estimate will typically organize different cost types together to support the estimating process, however as the budget is conformed to the requirements of project execution the different cost types need to be broken out in line with the above considerations.

The level of detail should also be carefully considered. Too much detail will saddle the project team with an unrealistic burden of capturing unnecessary data. Often this will result in frustration, shortcuts, work arounds and ultimately less accurate data captured. Too little detail will result in less meaningful insights gained around project or portfolio performance.

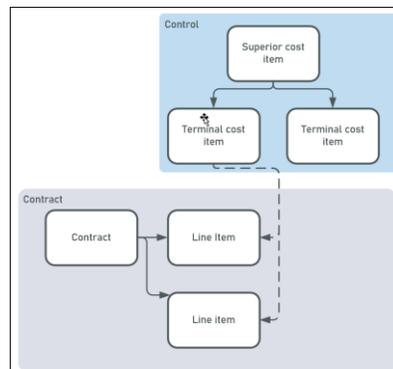
5.2.1 Procurement type cost items

Commitments raised in InEight Contract are aligned with the terminal cost items in Control via allocation at the contract line item. Like other cost item types the breakdown of procurement cost items is driven by the required visibility of procurement packages in Control for cost performance and forecasting.

Quantity claiming in Control drives the calculation of earned value and enables various forecasting methods. Terminal cost item quantity and unit of measure can be configured to allow claiming of progress in line with procurement costs spent or accrued to date.

There are three possible scenarios for the relationship between terminal cost items and contract line items.

5.2.1.1 Terminal Cost item per Contract



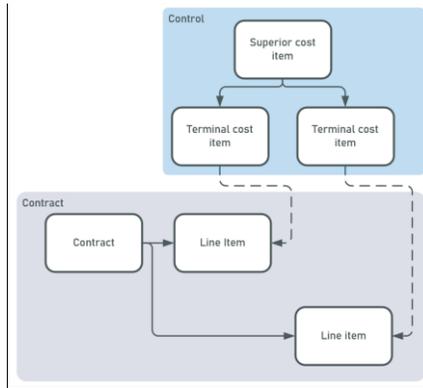
This configuration provides the best combination of visibility of discrete procurement packages in Control while enabling contract detail to be managed in the Contract module. This structure

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provides the best visibility of procurement budget in Bid Packages as well as enabling the best use of the committed cost in Control for forecasting and status.

This structure is suitable for major subcontract or materials procurement packages where discrete visibility of commitment and forecasting is required in the project budget.

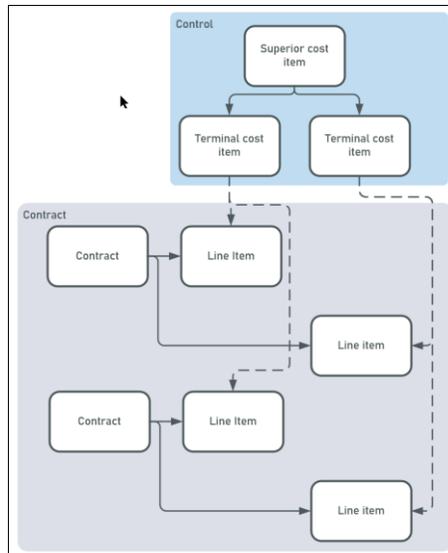
5.2.1.2 Terminal cost item per contract line item



This configuration provides greater detail in Control to the single cost item per contract; however this comes with additional overhead managing cost items and associated data in Control.

Similar to above this structure is suitable for major subcontract or materials procurement packages where a greater level of detail is required in Control that justifies the additional management effort.

5.2.1.3 Many contract line items per terminal cost item (potentially across many contracts)



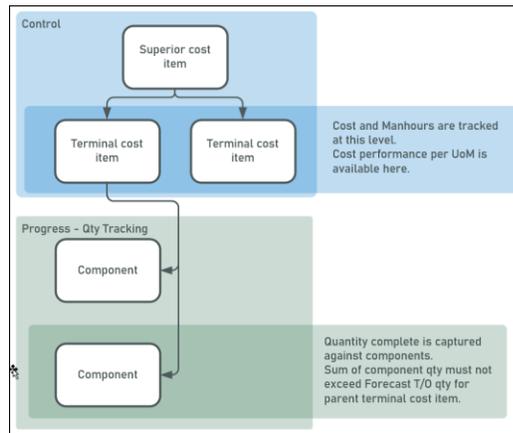
This configuration provides no visibility in Control over the cost content of the terminal line items. This structure is suitable for procurement such as miscellaneous or low value procurement items.

5.2.2 Direct Labor and Equipment Costs

This type of cost item is used for the execution of direct cost activities where cost performance is tracked at the terminal cost item in terms labour hours or labour and equipment cost. Quantity is

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tracked either using components in progress or quantity claimed directly in Control. Hours are captured in either Daily Plan or Weekly Time Sheet against the terminal cost items.



Careful consideration must be given to the breakdown of activities at the terminal level. The ability to track cost performance becomes more granular with a greater breakdown at the terminal level, however with this detail comes the burden of capturing the data. Too many cost items will discourage field staff from accurate data entry and will ultimately lead to data that does not provide the desired insight on cost performance. Superior cost structure may also dictate the level of detail at the terminal level e.g. activities per phase or project deliverable.

There are typically three methods of structuring this type of cost item:

5.2.2.1 *Labor only – employed*

Used for tracking labor performance against activity UoM. Manhours per UoM, cost per manhour and other labor measures are key performance measures. Budget will have manhours and labor budget only.

Manhours are captured through Daily Plans or Weekly Timesheet and cost is calculated through payroll. Quantity complete is captured either via Daily Plan/Quantity tracking or direct in Control.

5.2.2.2 *Labor and equipment – owned/employed*

Used for tracking performance against unit of measure where equipment and labor resource requirements are proportionate to each other and also the execution of the activity. An example is bulk earthworks tracked in cubic meters where an excavator is always engaged with an operator. Manhours, equipment cost and composite cost performance per UoM are key performance measures.

Quantity complete is tracked and actual man and equipment hours are captured on a Daily Plan. Hours captured are used to calculate labor cost through payroll and equipment cost through asset management.

5.2.2.3 *Labor and equipment – subcontract – cost performance only*

Used for tracking performance against unit of measure where resources performing the works are engaged on a subcontract basis – either time and money or unit rate (cost item UoM). Hours are not a key performance measure, so cost items have only labor and equipment budget either in discrete cost categories or as subcontract cost.

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This type of cost item would be used where subcontract resources are utilized but cost performance risk is not passed to the subcontract resources. This is distinct to subcontract/procurement type costs where lump sum or unit rate cost performance is passed to the subcontractor.

Quantity complete is tracked and actual man- and equipment-hours may be tracked on Daily Plans to:

- Validate subcontractor claims
- Substantiate site resource hours for client reporting
- Enable daily production cost tracking dashboards

5.2.3 Budget holding cost item

Detailed quantity or project execution planning is not always available on project kick off. It may be that the need to track indirect and site establishment costs precedes the availability of a detailed quantity take-off or procurement strategy. In this case it is possible to create the initial project budget with a number of budget 'holding' cost items. The budget will be locked with these items in place, so original budget will remain here for the project duration. As project detail evolves current budget values will be update and moved to the new detail in the CBS using budget moves.

An example of procurement budget that develops detail as the project evolves would be budget held in a terminal cost item:

Tasks			Cost Item Data		
☐ CBS position	Description	WBS phase code	OB total cost	CB total cost	Approved budget changes
☐ 1	Project	1000	\$ 1,000,000.00	\$ 1,000,000.00	\$ 0.00
☐ 1.1	Procurement	1001	\$ 1,000,000.00	\$ 1,000,000.00	\$ 0.00
☐ 1.1.1	Procurement Budget	1002	\$ 1,000,000.00	\$ 1,000,000.00	\$ 0.00

Then expanded as procurement packages are detailed:

Tasks			Cost Item Data		
☐ CBS position	Description	WBS phase code	OB total cost	CB total cost	Approved budget changes
☐ 1	Project	1000	\$ 1,000,000.00	\$ 1,000,000.00	\$ 0.00
☐ 1.1	Procurement	1001	\$ 1,000,000.00	\$ 1,000,000.00	\$ 0.00
☐ 1.1.1	Procurement Budget	1002	\$ 1,000,000.00	\$ 400,000.00	(\$ 600,000.00)
☐ 1.1.2	Design Package	1003	\$ 0.00	\$ 200,000.00	\$ 200,000.00
☐ 1.1.3	Materials Procurement	1004	\$ 0.00	\$ 400,000.00	\$ 400,000.00

5.2.4 Contingency

5.2.4.1 Management Reserve

Management reserve is project contingency that lives outside of the project budget for the unknown unknown risks. This would typically not be included in the project CBS. If management reserve were to be drawn down for inclusion in the project budget this would take the form of a contract adjustment to include the additional funding to the project CBS.

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5.2.4.2 Contingency Reserve

Contingency reserve is to cover risks considered as known unknowns and would typically live in discrete contingency cost items in the project CBS. Contingency should not be directly included in cost items where cost performance is required against budgeted rates.

For example, an excavation cost item with contingency included will show a rate per unit of measure that includes this contingency. This would represent the worst-case scenario to project teams as the budget or targeted cost rate. Instead, a discrete contingency item, say for rock excavation, should be used. If rock is encountered, then either:

- cost can be tracked against the excavation cost item to show the diminished performance and contingency draw-down can be tracked through claimed quantity and forecast value against the contingency cost item, or
- cost for regular excavation can be tracked against the excavation cost item and the rock contingency item can be used to track cost of the actual rock impacted excavation.

5.2.5 Aggregate cost items

In the cases described above the separation of discrete cost types allows for accurate and simplified tracking and reporting of cost performance. This separation of cost types would naturally align with the cost categories utilized within the CBS cost item.

There are other scenarios where the aggregation of cost types is appropriate to simplify the management of these items in the CBS. These are typically activities where cost performance per unit of measure is not a requirement. Examples include:

- General project procurement such as small tools, stationary or consumables
- Low value and low risk cost items

5.3 Cost Item Configuration options

The following fields are available in Control for configuration of cost items:

5.3.1 Allow As-built

The allow as-built setting determines what actual values can be recorded against a cost item.

Available values and impact are:

Setting	Detail
Cost	Cost and manhours can be tracked, however manhours cannot be allocated on Daily Plans or Weekly Timesheets
Quantity	Only quantity complete can be tracked.
All	Cost, quantity equipment and manhours can be tracked.
None	No actual transactions can be tracked.

The setting of All against all terminal cost items that will have actual transactions is the recommended setting. This will best enable calculation of earned value, cost performance tracking, forecasting and roll-up cost item % complete.

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Once actual transactions have been recorded against a cost item the Allow As-built setting cannot be changed back to None.

The Allow As-built field can be configured in Estimate prior to publish to Control or configured directly in Control.

5.3.2 CBS contribute qty

The CBS contribute qty setting allows child cost items to contribute to the quantity or parent cost items. In order for the cost items to contribute they must have matching units of measure.

In the example below item 12.3.1 contributes qty to the parent where 12.3.2 does not. This structure allows for visibility of cost performance of both productive work and lost time at the terminal level and aggregate performance at the superior level.

Tasks				Tasks-Var		
<input type="checkbox"/>	✓ CBS position	Description	WBS phase code	Forecast (T/O) qty	UoM	CBS contribute qty
<input type="checkbox"/>	12.3	Piling & anch. soil disposal		550.00	Cubic Meter	<input type="checkbox"/>
<input type="checkbox"/>	12.3.1	Piling & anch. Spoil Disposal	1079	550.00	Cubic Meter	<input checked="" type="checkbox"/>
<input type="checkbox"/>	12.3.2	Lost Time - Acces Ramp Issues	LT01	1.00	Lump Sum	<input type="checkbox"/>

This setting does not exist in InEight Estimate and needs to be configured in Control after establishment of the project budget. This setting should be enabled prior to locking the project budget or executing a budget move so that OB and CB values reflect the correct qty, UoM and unit rates.

5.3.3 Qty Driver

The available settings for Qty Driver are 'Fixed' or 'Superior CI'. The Superior CI setting for this field enables the use of superior cost item quantity to drive the qty of child cost items.

Qty driver can be established against cost items in Estimate prior to publish to Control.

5.3.4 Hide in Plan and Progress

Hide in Plan and Progress can be used for cost items where quantities and hours will not be tracked through these applications. This may be for cost items that will never be tracked this way or to enable a staged release of data to Plan and Progress over the project duration. It cannot be used to hide cost items in plan and progress once claiming has commenced against components.

Hide in Plan and Progress is not available in Estimate and must be configured in Control.

5.3.5 As-built Lock

When selected As-built lock will not allow the allocation of actual costs against a cost item.

Example use cases for locking ERP status:

- Work will not begin for two more years
- Foreman is not allowed to claim more quantity because work is 100% complete
- Work is complete and you do not want people mistakenly charging cost to completed to cost items

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If as-built lock is enabled for a cost item, any actual cost transactions posted via integration to the cost item will result in the API data being rejected and an error file being posted in the import register.

The As-built lock field is not available in Estimate and needs to be configured directly in Control.

5.4 Pay Items

For general contractors where the project revenue is governed by an upstream client contract the Pay Items represent the Contract line items against which invoices will be raised and revenue recognized.

Cost items in the CBS can be allocated to a Pay item at the terminal or superior level to enable cost item progress to contribute to earned revenue on the project. This also allows for calculation of revenue forecasts. One pay item can have many cost items associated, but each cost item can have only one pay item.

Cost items can have pay item assigned at any level in the CBS, however they should be allocated at the terminal level as far as practical. Care should be taken to ensure cost items are allocated only once at either terminal or superior level to avoid duplication in the calculation of earning rules for the pay item.

Not all cost items require a pay item allocation. If cost items are indirect costs and do not directly contribute to the calculation of revenue earned, they can be left unallocated. Margin and indirect cost will be tracked in the CBS but be represented in the difference between the total revenue and total cost.

Pay item type should be configured to match the head contract and revenue calculation method. Available options are Fixed Final Cost, Cost Plus and Unit Rate.

Pay items and pay item mapping can be established in InEight Estimate and published to Control or configured directly in the Control interface.

5.5 Tags and User Defined Fields

Tags and user defined fields are available in InEight Estimate and Control to enable customers to reorganize project data to support additional reporting, analysis, and cross project comparisons.

Examples include:

- A tag field used to identify the cost owner. This would enable the cost owner to filter the CBS view in Control to just the required cost items.
- A Contractor that performs similar work across projects could tag discipline or commodity against a cost item to enable cross-project comparison of cost performance.
- Pay item UDF used to track client pay item hierarchy. This can then be used to group and sort pay items in the pay item view.

User Defined Fields (UDF) are free text fields and Tags are pre-populated lists of values that are typically selected via a drop-down menu. There are many fields available across a number of entities in Control.

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Entity	Available
Project	Tag x 15
CBS – cost item	Tag x 25, 15 x UDF
Pay Item	Tag x 10, UDF x 10
Resource	Tag x 3, UDF x 10
Account Code	Tag x 20, UDF x 10

Tag values will need to be established at the organization or project level in Control prior to being utilized against items. The above tag and UDFs can be configured in Estimate and published to Control with the CBS or configured directly in Control.

6 Change management

Change to the project budget is an inevitable consequence of project execution. The source of project change can come through several project events including:

- Increase in the level of detail as project scope is clarified or detailed take-offs are completed
- Budget evolving due to a phased approach to project execution e.g. construction budget defined after completion of detail design
- Reactive project variations such as inclement weather requiring discrete tracking of costs for claims
- Implementation of new scope due to project variation
- A change in execution methodology from subcontract to self-perform

Each of these events requires change in the form of a budget move or contract adjustments. While managing this change is not in the scope of this document, planning for change should be a part of preparing the budget and change management should be covered in budgeting standard operating procedures. The considerations listed here for establishing the budget match those required when deciding how to represent this change in new or adjusted cost items.

Detailed knowledge of the change management process in Control is also a key success factor to proper budget planning and tracking through project execution.

7 Publish from Estimate Considerations

This section contains some of the specific considerations when publishing budget data from InEight Estimate to Control.

7.1 Calculated cost items

InEight Estimate allows the calculation of cost item detail using several complex structures. While these structures enable efficient calculation of the estimate value, Control does not have equivalent data structures or calculation capabilities. When publishing to Control any of these structures must be removed from the Estimate file during the conforming process leaving cost items that are built up of either plug values or detailed resource build up.

Items that must be removed or broken down into standard cost items and resources are:

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- Dependent cost items
- Cost item assemblies

7.2 Ad-hoc resources

Estimate allows the use of ad-hoc resources, that are not linked to a library resource, in the calculation of a cost item value. These items will not be imported to Control and either need to be converted to a library resource or a plug value against the cost item.

7.3 Manhours

Manhours published from Estimate to Control come from the resource hours allocation against terminal cost items. If the project budget does not include manhours calculated from a detailed buildup of resources, then there are two options for the import of plug manhour values into Control.

7.3.1 Create a labor resource in Estimate

To load cost items with labor hours a simple labor resource can be created and allocated against the required cost items. Quantity of hours can then be allocated against this resource. To simplify the allocation of the resource and hours qty excel upload can be utilized into Estimate.

On publish the resource and hours will be imported with the budget into Control.

7.3.2 Import manhours direct to Control

Excel import into the Control interface can also be used to upload hours against terminal cost items without requiring a resource buildup. The budget structure and associated data can be imported from Estimate to Control and then the interface upload can be used to allocate manhours as required.

7.4 Productivity Factor

Productivity factor can be used in Estimate to calculate partial resource utilization. While the productivity factor value will import to Control on publish this value will not be used in the calculation of manhours. Resources need to be updated in Estimate to reflect the actual budgeted manhours that are required for the cost item in Control.

7.5 Organization level CBS tags

Several tag fields in Control are organization level validated fields. If tags are required with the imported data from Estimate the tag values must be established in Core at the organization level prior to import. If the tags are not populated in Core the imported data will leave these fields blank.

The tag fields are:

- Job Folder Tag 8
- CBS Tag 9
- CBS Tag 11
- CBS Tag 12
- CBS Tag 20

7.6 Pay item configuration

Pay item configuration and mapping will import from Estimate to Control. As such the pay items should be configured to the extent required in control. Key fields that should be properly configured in Estimate prior to publish are:

- Payment method
- Forecast T/O Qty
- Pay Item Number
- UoM
- Pay Quantity
- Unit Price and Total Price
- Any user defined fields and tags