Bridging the Gap
Welcome to PwC’s working capital survey of the engineering and construction sector. Working capital is crucial to every company, but is particularly important for engineering and construction companies who typically operate in a low margin, highly competitive sector and often without significant tangible asset bases.

Historically well managed contractors have enjoyed a level of advance cash from their clients and have delayed paying their supply chain. However, there is evidence from our survey that those opportunities are becoming increasingly rare.

The global survey of over 10,000 companies included 746 companies across the global engineering and construction sector. At 4.5% the sector has shown the greatest level of net working capital decline over the last four years across all industry sectors. This is likely to be a reflection of the pressure the industry’s clients have felt, in particular governments around the world who are the owners of the largest capital projects. It may also reflect an increased level of exposure being carried in contractor balance sheets where recoveries of variations, claims and overruns are proving harder to collect.

The industry suffers from its fragmented nature, and the fact that control is decentralised, often down to a project level. This makes working capital control harder to influence from a central finance perspective and forecasting of working capital more challenging than many other sectors.

We work with many engineering and construction clients to improve their working capital and help them implement the necessary disciplines in a challenging sector and current environment.
Companies in the engineering and construction (E&C) sector have amongst the highest capital consumption of any industry. That’s why effective working capital management (WCM) is such a top priority. Cash underpins every area of their operations – from keeping projects running smoothly on schedule to paying sub-contractors and procuring new materials. If WCM processes break down, businesses are at risk.

The sector is split in to three distinct sub-sectors, each with its own unique performance drivers, but there are some commonalities that drive performance.

The conversion of consumed costs and effort into bills is a particular challenge for the engineering and homebuilding sub-sectors. This is a process that requires good discipline and focus on minimising working capital. Whilst there is often a good focus on cash in such businesses, we find that there are still good opportunities to improve working capital and, as a result, release even more cash. Typically this comes down to focusing in on the detail and ignoring some of the distorting factors such as advance payments and managing each milestone and bill on its own merits.

In the homebuilding sub-sector we can see very high levels of inventory which may be skewed by stocks of development land. This is land that may have been bought speculatively in advance while the price was attractive or may simply have remained undeveloped as the market contracted. But even in a buoyant economy, this sector is likely to have high investments in land simply because of the delay between the purchase of land and the completion of a development.

Whilst our analysis has shown that net working capital (NWC) has increased across the sector, there is a prevailing trend of improvement at an individual company level with average levels of working capital showing improvements in most regions and across two of the three sub-sectors.
The sector experienced a jump in revenue of 10% year-on-year.

Companies in the E&C sector have amongst the highest capital consumption of any industry.

European, African and Australasian companies have some of the world’s lowest levels of working capital.

Widening gap between the top and bottom performers.

746 companies €1.52 Trillion

We’ve looked at 746 companies in the E&C sector with revenues above €1.52 Trillion.

Homebuilding is dominated by high levels of inventory.
Construction and Engineering

10%

The sector experienced a jump in revenues of 10% year-on-year

European, African and Australasian companies have some of the world’s lowest levels of working capital

Companies in the E&C sector have amongst the highest capital consumption of any industry
Our study looks at 746 companies in the engineering & construction sector with revenues above €1.52 Trillion

**Number of engineering & construction companies in the study by region**

- **23** Africa
- **43** Middle East
- **91** USA, Canada
- **354** Asia
- **33 Australasia
- **45 Americas
- **157 Europe

**Revenue of engineering & construction companies in the study by region (€ billion)**

- **17** Africa
- **34** Australasia
- **178** USA, Canada
- **18** Middle East
- **41 Americas
- **513 Europe
- **720 Asia
- **500000
- **1000000
- **1500000
The sector experienced a jump in revenues of 10.3% year-on-year, increasing the need for cash.

### Engineering and construction revenue trend

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Percentage Increase / Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>€1.12bn</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>12.4%</td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td>7.6%</td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>2.1%</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>10.3%</td>
</tr>
</tbody>
</table>
Engineering & construction companies have struggled to cope with increasing levels of inventory over the last five years.

2014 saw strong growth compared to the previous 5 years, but at the cost of higher levels of working capital. Improvements in DSO and DPO were not sufficient to offset the latest increase in DIO.
European, African and Australasian companies have some of the world’s lowest levels of working capital, but have seen an improving trend in recent years.

The contrast between the two largest regions from an E&C perspective (Europe and Asia) could not be more stark.
Construction and Engineering Sub-sectors

Widening gap between the top and bottom performers

Homebuilding dominated by high levels of inventory

Engineering has shown a marginal increase in NWC
In addition to the 10% increase in revenues from 2013 to 2014, NWC% showed a marginal increase. The weighted average DSO improved by seven days over the five year period. Companies at either end of the performance curve have been able to deliver improvements with the best performers achieving the greatest improvements. DIO has shown a consistent downward trend over the five year period; deteriorating by 36 days. As shown by the relatively stable top and bottom performance levels, this is mainly driven by larger companies. Conversely, although the weighted average DPO has remained relatively flat over the period, the gap between the best and worst performers is growing bigger each year as the best get better and the bottom performers continue to see DPOs reduce each year.
Despite a healthy 9% growth in revenues, the construction materials sub-sector has only seen a marginal increase in working capital of around 2%. Both DSO and DIO have shown marginal deteriorations in the weighted average performance. But the most striking observation is the deterioration in inventories for bottom performers in the sector whilst the best performers are improving, thus widening the gap between the best and worst performers. Both top and bottom DPO performers witnessed deterioration in performance, as shown by the slightly increased weighted average performance.
The homebuilding sub-sector has seen revenues increase by around 21% year-on-year, while working capital has increased by less than 3%. The homebuilding sub-sector is dominated by high levels of inventory which can be distorted by the speculative purchase of land stocks for future development. Whilst DSOs are already typically low in this sector, and driven mainly by practices of commercial and bespoke homebuilders, this area has seen a further improvement of 30 days across the five year period. DPO for the top performers has seen a deteriorating trend over the last five years while the weighted average DPO for the sub-sector has remained fairly steady, fluctuating between 44 and 41 days over the five year period.
How can we support you

1. Complete a working capital benchmarking exercise to compare performance against peers and identify potential improvement opportunities.
2. Perform a diagnostic review to identify ‘quick wins’ and longer-term working capital improvement opportunities.
3. Develop detailed action plans for implementation to generate cash and make sustainable improvements.
4. Assist the realisation of sustainable working capital reduction by implementing robust, efficient and collaborative processes.

Addressing the key levers:
- Identification, harmonisation and improvement of commercial terms.
- Process optimisation throughout the end-to-end working capital cycles.
- Process compliance and monitoring.
- Creating and embedding a ‘cash culture’ within the organisation, optimising the trade-offs between cash, cost and service.

Examples of areas where PwC could help you to release cash from working capital:

**Accounts receivable**
- Credit risk policies
- Aligned and optimised customer terms
- Billing timeliness and quality
- Contract and milestone management
- Prioritised and proactive collection procedures
- Systems-based dispute resolution
- Dispute root cause elimination
- Asset based lending / securitisation

**Accounts payable**
- Consolidated spending
- Increased control with centre-led procurement
- Purchasing channels to avoid leakage
- Aligned and optimised payment terms
- Supply chain finance
- Payment methods and frequency
- Eradicated early payments

**Inventory**
- Lean and agile supply chain strategies
- Global coordination
- Forecasting techniques
- Production planning
- Accurate tracking of inventory quantities
- Differentiated inventory levels for different goods
- Balanced cash, cost and service
- Asset based lending
Our team has helped deliver significant working capital benefits around the world

We have helped to deliver over €26bn of Working Capital benefits.

We deliver substantial benefits, typically between 5-10% of revenue.

We deliver results fast, typically 5-15% of improvements are quick wins.

Typical project results

<table>
<thead>
<tr>
<th></th>
<th>Range of improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receivables reductions</td>
<td>20% – 40%</td>
</tr>
<tr>
<td>Payables improvements</td>
<td>20% – 80%</td>
</tr>
<tr>
<td>Inventory reductions</td>
<td>15% – 50%</td>
</tr>
<tr>
<td>Net working capital improvements</td>
<td>30% – 70%</td>
</tr>
<tr>
<td>Quick wins as % of total opportunity</td>
<td>5% – 15%</td>
</tr>
<tr>
<td>Working capital as % of sales</td>
<td>5% – 10%</td>
</tr>
</tbody>
</table>

Challenges in working capital optimisation:

1. **Perception:**
   - Working capital is an operational issue, but is often perceived to sit with finance.

2. **Cross functional:**
   - Sustainable improvements are complex, requiring an operational and cross functional approach.

3. **Complexity:**
   - Improvements require structural changes for many interrelated processes.

4. **Driven by people:**
   - Needs hands-on approach ‘on the shop floor’ to change operational behaviour.
Basis of calculations and limitations

Basis of calculations
This study provides a view of global working capital performance in the engineering and construction sector and is based on the research of 746 companies in the world. For consistency reasons, and to be able to add the individual ratios together, we have calculated DSO based on sales, DPO and DIO based on Cost of Goods Sold (COGS).

<table>
<thead>
<tr>
<th>Metric</th>
<th>Basis of calculation</th>
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</thead>
<tbody>
<tr>
<td>NWC % (Net working capital %)</td>
<td>NWC % measures working capital requirements relative to the size of the company.</td>
</tr>
<tr>
<td>DSO (Days sales outstanding)</td>
<td>DSO is a measure of the average number of days that a company takes to collect cash after the sale of goods or services have been delivered.</td>
</tr>
<tr>
<td>DIO (Days inventories on-hand)</td>
<td>DIO gives an idea of how long it takes for a company to convert its inventory into sales. Generally, the lower (shorter) the DIO, the better.</td>
</tr>
<tr>
<td>DPO (Days payables outstanding)</td>
<td>DPO is an indicator of how long a company takes to pay its trade creditors.</td>
</tr>
<tr>
<td>CCE (Cash conversion efficiency)</td>
<td>CCE is an indicator of how efficiently a company is able to convert profits into cash.</td>
</tr>
</tbody>
</table>

Limitations of this study
Companies have been assigned to countries based on the location of their headquarters. Although a significant part of sales and purchases might be realised in that country, it does not necessarily reflect typical payment terms or behaviour in that country.

As the research is based on publicly available information, all figures are financial year-end figures. Due to disproportionate management efforts to improve working capital performance towards year-end (also referred to as ‘window dressing’), the real underlying working capital requirement within reporting periods might be higher. Also off-balance-sheet financing or the effects of asset securitisation (e.g. receivables) have not been taken into account.
## Summary data

### Number of companies

<table>
<thead>
<tr>
<th>Primary industry</th>
<th>Africa</th>
<th>Americas</th>
<th>Asia</th>
<th>Australasia</th>
<th>Europe</th>
<th>Middle East</th>
<th>USA, Canada</th>
<th>Total</th>
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<tbody>
<tr>
<td>Construction and Engineering</td>
<td>8</td>
<td>13</td>
<td>198</td>
<td>26</td>
<td>84</td>
<td>17</td>
<td>34</td>
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<tr>
<td>Construction Materials</td>
<td>15</td>
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<td>139</td>
<td>5</td>
<td>59</td>
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<td>13</td>
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<td>14</td>
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<td><strong>23</strong></td>
<td><strong>45</strong></td>
<td><strong>354</strong></td>
<td><strong>33</strong></td>
<td><strong>157</strong></td>
<td><strong>43</strong></td>
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### NWC % 2014

<table>
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<tr>
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<th>Africa</th>
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<th>Asia</th>
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<tbody>
<tr>
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<td>16.5%</td>
<td>25.8%</td>
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<td>44.1%</td>
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<td>8.4%</td>
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<td>93.0%</td>
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<td>82.7%</td>
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<td><strong>43.4%</strong></td>
<td><strong>29.6%</strong></td>
<td><strong>10.1%</strong></td>
<td><strong>15.6%</strong></td>
<td><strong>42.5%</strong></td>
<td><strong>34.1%</strong></td>
<td><strong>25.4%</strong></td>
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### DSO 2014

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<tbody>
<tr>
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<td><strong>112</strong></td>
<td><strong>83</strong></td>
<td><strong>60</strong></td>
<td><strong>69</strong></td>
<td><strong>134</strong></td>
<td><strong>55</strong></td>
<td><strong>75</strong></td>
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### DIO 2014

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<td>75</td>
<td>75</td>
<td>169</td>
<td>56</td>
<td>75</td>
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<tr>
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<td><strong>41</strong></td>
<td><strong>73</strong></td>
<td><strong>99</strong></td>
<td><strong>121</strong></td>
<td><strong>109</strong></td>
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### DPO 2014

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<th>Europe</th>
<th>Middle East</th>
<th>USA, Canada</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction and Engineering</td>
<td>25</td>
<td>65</td>
<td>109</td>
<td>81</td>
<td>104</td>
<td>79</td>
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<td>57</td>
<td>63</td>
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<td>40</td>
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<tr>
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<td>41</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>39</strong></td>
<td><strong>53</strong></td>
<td><strong>101</strong></td>
<td><strong>73</strong></td>
<td><strong>90</strong></td>
<td><strong>72</strong></td>
<td><strong>36</strong></td>
<td><strong>87</strong></td>
</tr>
</tbody>
</table>

### Total cash opportunity from working capital (€ million)

<table>
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<tr>
<th>Primary industry</th>
<th>Africa</th>
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<th>Asia</th>
<th>Australasia</th>
<th>Europe</th>
<th>Middle East</th>
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<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1,034</td>
<td>1,670</td>
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<td>4,512</td>
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<td>11,235</td>
<td>18,871</td>
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<tr>
<td><strong>Grand total</strong></td>
<td><strong>689</strong></td>
<td><strong>3,377</strong></td>
<td><strong>56,576</strong></td>
<td><strong>623</strong></td>
<td><strong>15,321</strong></td>
<td><strong>2,829</strong></td>
<td><strong>15,595</strong></td>
<td><strong>95,010</strong></td>
</tr>
</tbody>
</table>

#### Highest opportunity

#### Low opportunity
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Stephen is a working capital director working across the UK regions. He has a proven track record of complex working capital change programmes across a diverse range of industries and company sizes. Prior to joining PwC Stephen worked in the telecoms sector.

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Sub-sectors
How can we support you?
Appendices
Contacts