

# Economic crime: people, culture & controls

The 4th biennial Global Economic Crime Survey  
Engineering and Construction industry supplement



The overall picture around economic crime in the Engineering and Construction (E&C) sector this year is somewhat mixed. Whilst the overall percentage of companies reporting incidents and the mean number of incidents are down in comparison to 2005 survey results, detection via chance mechanisms has increased, while the efficacy of internal audit in detecting economic crime decreased. In essence, companies may simply be detecting less economic crime, particularly in light of lower levels of respondents reporting strengthening control systems.

Our results show that corruption and bribery remains a significant problem, meriting continued attention in the future, given that nearly a quarter of respondents globally, and over two-fifth of respondents in Central and Eastern Europe, report having been asked to pay a bribe. IP infringement also stood out as cause for concern, particularly in emerging markets, where incidence was high.

These results are some of the highlights of our E&C industry supplement to *Economic crime: people, culture & controls: The 4th biennial Global Economic Crime Survey*<sup>1</sup>. In this industry summary we examine data from 321 E&C companies in 40 countries. We compare

and contrast their views with those of executives across all industries, as well as with E&C respondents interviewed in our 2005 survey. This report will help to highlight the importance of this issue to E&C industry executives, stimulate discussion, and aid in the development of increasingly effective means of combating economic crime.

## The prevalence and type of frauds

Our 2007 survey results indicate that the prevalence of economic crime in the E&C sector has levelled off slightly. The number of companies suffering from economic crime is down slightly – 40% of E&C companies reported economic crime, compared with 43% of respondents across all industries, and 43% in the E&C sector in 2005. The mean number of incidents of economic crime has decreased, reducing from 7.4 incidents in 2005 to 5.8 incidents in 2007 (see figure 1). Central and Eastern Europe stood out as the region reporting economic crime most frequently, with 49% of E&C respondents reporting at least one incident and with a much higher mean number of incidents (11.8).

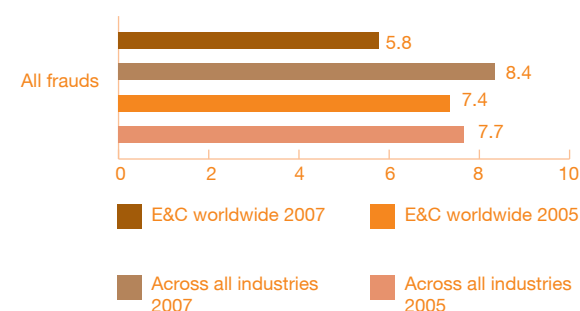
Asset misappropriation remains the most widely reported type of economic

crime by E&C respondents, with 27% of companies reporting instances of this form of fraud, a slight increase over the 24% seen in 2005. While this reverses 2005's trend of improvement in this area, the industry is actually performing slightly better in comparison to the rate seen across all industries (30%; see figure 2). In 2005 we reported a trend towards installing better tracking devices which help deter theft of construction plant. Construction sites provide enterprising fraudsters with multitudes of options for misappropriating assets, from diverting a truck-load of concrete, to substituting inferior materials or falsifying their quality, so a better result than the overall industry average is actually an encouraging sign that preventative measures such as tracking devices are having an impact.

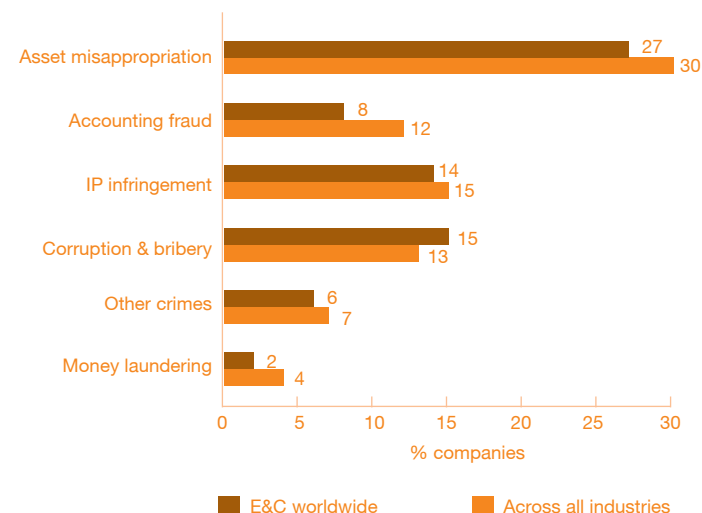
Corruption and bribery remains a significant problem for the industry. The incidence of this type of economic crime has remained fairly stable, with 15% of companies reporting incidents this year compared with 13% across all industries and 14% of E&C companies in 2005.

The nature of the construction industry, where the procurement of goods and services and the selection of contractors and suppliers on large-scale projects may be decided or influenced by individuals

1 Average number of incidents of economic crime reported in the Engineering and Construction industry compared to all industries



2 Percentage of companies surveyed reporting different types of economic crime



1 *Economic crime: people, culture & controls: The 4th biennial Global Economic Crime Survey* is available for download at [pwc.com/crimesurvey](http://pwc.com/crimesurvey). The survey is based on interviews with executives responsible for detecting economic fraud in 5428 companies in 40 countries.



within an organisation, provides a number of opportunities for corruption and bribery. This can be amplified by a lack of transparency or governance of the processes established to judge and report on the levels of performance and value for money actually achieved. In many circumstances, capital project owners may have difficulty establishing objective, defined criteria to determine the best contractor or supplier for a particular project. As a result, an environment still exists where individuals can influence the process and outcome.

Vigilance in combating the problem is necessary; around one-quarter of engineering and companies have been asked to pay a bribe (25% vs. 18% across all industries), so the potential exists for incidence to increase. The situation was particularly pronounced in Central & Eastern Europe, where 41% of E&C respondents have been asked to pay a bribe, and less prevalent in Western Europe (13%). Further, 39% of E&C companies globally experienced business setbacks due to corruption by competitors (across all industries: 24%). Western European companies also reported such experiences more often than did their peer group across all industries (28%), but by far the highest rate was found in Central & Eastern Europe (60%).

In recent years, a number of major E&C players have looked to increase their activities in other countries – and cross-border activities bring with them added risk of some types of economic crime. While the corruption risk in Central & Eastern Europe is great, the region is also highly attractive for the sector. PwC's 2008 report, *Building New Europe's Infrastructure – Public Private Partnerships in Central and Eastern Europe*, available for download at [pwc.com/e&c](http://pwc.com/e&c), highlighted the unprecedented levels of activity in projects aimed at modernising public and social infrastructure, as the region works to meet its estimated €500 billion total infrastructure investment need.

Companies need to balance the opportunities of operating in markets outside of their home territories with the corresponding higher risk of corruption. In Western Europe the problem is especially acute: one-third of the cases of corruption and bribery reported by respondents involved a party located outside of the company's home country.

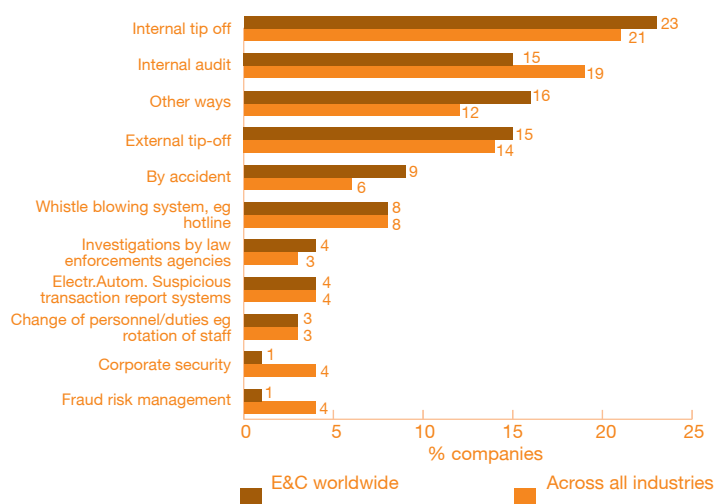
The situation around accounting fraud remained fairly stable, with 8% of E&C companies reporting this type of economic crime, (2005: 9%), a rate which is slightly lower than that across all industries (12%). In the time leading

up to this survey, accounting issues arising from construction contracts have been less prevalent when compared to other industries. This does not reflect the current market, however, where contracting frameworks for capital projects are becoming more complex.

### Incidents costing more on average; IP infringement cases are particularly expensive

The average financial losses per company in the E&C industry were slightly higher than the global average (US\$2.92 million vs. global all industries: US\$2.42 million), and up sharply from 2005 (US\$1.12 million). Companies in Western Europe suffered by far the highest average losses at US\$5.18 million, although companies in this region were smaller and had been less often victimized by fraud. This rate was more than double the level seen by Western European E&C companies in 2005 (US\$2.25 million), and is driven by a fairly large number of companies reporting steep losses. Eight per cent of Western European E&C companies lost more than US\$10 million over the last two years. In contrast, no more than 4% of companies in all industries reported losses of more than US\$10 million and only 1% of E&C companies (2% of Western European E&C companies) in 2005.

### 3 Methods of detection of most serious incidents of economic crime



Note: Categories with response rates of less than 2% have been omitted

By far the highest financial losses in the E&C industry were caused by cases of intellectual property (IP) infringement: US\$5.09 million vs. global all: US\$1.90 million. In Western Europe, companies suffered extreme losses due to this type of economic crime (US\$12.72 million). Almost one quarter (23%) of the Western European E&C companies lost more than US\$10 million over the last two years. IP infringement typically covers the copying of designs and specifications for specialised equipment, plant and process technology.

In addition to these direct costs, companies also need to consider the costs of managing incidents – and far more importantly, potentially wide-reaching collateral damage. In terms of the direct cost of managing economic crime, costs reported by E&C companies were slightly less than those reported across all industries, but were somewhat higher in Central & Eastern Europe, and notably lower in Asia & Pacific.

Economic crime can have a more far-reaching impact that is difficult to measure. Collateral damage can include damage to a company's brand or to its position with regulators and government clients. Staff morale may be impacted, with a resultant drop in productivity.

Negative publicity from fraud can also affect a company's share price. In the E&C industry, the most common type of collateral damage that an investigation can bring (whether it be for fraud, bribery, bid rigging / cartel or regulatory) is being dropped from a tender list for future opportunities.

Around half of companies in the E&C industry worldwide who detailed serious incidents of economic crime reported having suffered collateral damage from the same (52% vs. all industries: 54%), and 10% described the intangible damage as significant. IP infringement and corruption and bribery in particular stood out as areas where the rate of collateral damage reported was above average. E&C companies were somewhat less likely to report certain types of collateral damage including 'significant management distracted', 'significant financial/time expense involved in litigation' and 'more stringent regulatory oversight'.

### The emerging markets

This section takes a look at economic crime risks in the developing markets, including Brazil, China, India, Indonesia, Mexico, Russia and Turkey (a group which PwC terms the 'E7', or 'Emerging Seven').

Companies in the E&C industry experienced high rates of IP infringement in China (28%), as witnessed across a number of industry sectors, as well as in the other six emerging market countries (E6, 21%)

Companies headquartered outside the E7, but operating in these territories, face particular challenges related to economic crime. As is true across all industries, a large proportion of economic crime involves external parties; 75% of E&C companies reported at least one such case, and just under a third (32%) of these external perpetrators came from abroad. This proportion was particularly high in Western Europe (44%). When foreign offenders were involved in this industry, they mostly came from China (42%) and Western Europe, excluding UK and Germany (35%), but also from Asia & Pacific (26%) and Russia (25%).

Incidents of economic crime in the E7 proved costly. The average loss per E&C company in this region was nearly two-thirds higher than the level for the E&C industry globally (US\$4.81 million vs. US\$2.92 million). In the E6 countries (E7 excluding China), losses were particularly high through incidents of asset misappropriation (US\$ 8.95 million), and due to corruption and bribery (US\$

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4.57 million). Managing costs in the E6 countries were also somewhat higher than the average across the E&C industry globally and across all industries in the region.

Corruption and bribery were serious problems in the E7 countries. While the fairly high rate of incidence of corruption and bribery reported by E&C respondents responsible for business in China (17%) was similar to the rate seen across all industries (16%), levels reached 30% in the E6 countries. Further, the risk of future corruption in these countries is substantial for E&C companies. 44% of the companies in the E&C industry were asked to pay bribes in these countries, compared to a 25% global average, and more than one half (E7: 53%) reported having suffered business setbacks in the E7 because of other competitors having paid bribes, compared to 39% of E&C companies worldwide reporting these types of negative consequences.

### Detection of serious incidents more often through chance mechanisms; efficacy of internal audit declined

As is the case in many, if not all, other industries, E&C companies most often discover incidents of economic crime by

chance. The results of our 2007 survey indicate that even more serious incidents of fraud in the E&C industry are being discovered by chance (through tip-offs or by accident), 46% (see figure 3), up from 38% in 2005.

Internal audit proved less effective in detecting economic crime, with only 15% of serious incidents in the E&C industry coming to light as a result of internal audit activities, compared to nearly a quarter (24%) of sector crimes in our 2005 survey. There are a number of opportunities for the internal audit function to detect the types of fraud most common in the E&C industry. A proactive internal audit staff with field experience can perform a number of focused procedures to scan for fraud, including validating the existence and quality of suppliers and sub-contractors, researching anomalies in disbursements, looking for opportunities for kickbacks, particularly in respect to change orders and sub-contractor liability evaluation, and testing the integrity and security of IT applications.

Experience of working in the field is also particularly important for internal audit staff in the E&C industry. Staff members with a purely financial background may not be able to detect types of fraud common in the industry, such as

material substitutions or programme manipulations. For example, a large pump may be a substantial single-line item in the construction of a water treatment facility. One type of fraud might involve the substitution of a higher-value pump in a purchase order, while taking delivery of a lower-value version that nonetheless complies with contract standards, and pocketing the difference in value. An internal auditor with field experience would have a greater likelihood of detecting substitutions of this nature than an auditor without field experience.

### Reporting, investigations, recovery of lost assets

Discovering fraud is only the first step. Companies also need to decide how to deal with the perpetrator, and attempt to recover lost assets.

Upon the discovery of a serious incident of fraud, and consistent with the global results, the most common response of E&C companies was to inform their executive management (72%), albeit somewhat less frequently than did their peers across all industries (82%). Around 54% also reported fraud to law enforcement, a figure slightly below the average across all industries. This figure was slightly higher in Western

44% of E&C companies have been asked to pay bribes in the E7 emerging markets, and more than half report business setbacks due to corruption by competitors

Europe (59%). Investigation was primarily undertaken internally (eg internal audit 55%, in-house counsel 45%). Around half of companies also chose to call in law enforcement officers, a number in line with the rate across industries, and a substantial number (38%) turned to external lawyers as well. Although law enforcement office played only a minor role in the initial detection of serious incidents in the E&C industry (4% of cases detected through law enforcement participation), they were very important for the successful criminal investigation of cases.

E&C companies do not always send out consistently strong messages in response to serious incidents of economic crime. While criminal charges were pressed in almost half of all cases (46% of E&C cases vs. 50% across all industries), one-fifth of companies chose to do nothing in response to these incidents – a rate slightly higher than that for the E&C industry in 2005 (17%) or across all industries in 2007 (17%). This result is not surprising, given that the E&C industry has evolved from direct labour to an outsourced / sub-contractor model, where teams may work in an alliance or joint venture environment. As a result, employees may be involved on various projects and may change substantially.

Given that corporate memories may be fairly short, E&C companies may derive even more benefit from establishing a consistent company culture that includes appropriate control systems. Project owners need to send out a strong message that fraudsters will be prosecuted.

When it comes to recovering lost assets, E&C companies compare similarly with other industries, with 44% recovering at least some of their losses. This rate is down slightly from 2005, when 49% of companies recovered some of their losses. When E&C companies chose to prosecute, they experienced a notably low rate of success in garnering some restitution – only 39% of the companies in this industry who took perpetrators to court reported having recovered some of their losses through court proceedings (global all industries: 62%).

### Some key controls not yet in place

Overall, E&C companies reported a similar level of control measures as their peers across all industries. Compared to other industries, E&C companies were somewhat less well provisioned particularly in the field of prevention. Not only did they somewhat less frequently

possess control measures like fraud risk management (35% vs. global all industries: 47%) and corporate security (43% vs. global all industries: 52%), but they also had fewer preventive measures such as compliance programmes (56% vs. 61%). E&C companies were also less likely to have instituted frequent specific fraud training (22% vs. global all industries: 30%).

### Management awareness: undue optimism?

In the E&C industry, although 40% of respondents reported that their company was subject to economic crime in the last two years, only 10% anticipate economic crime over the next two years, much in line with other industry sectors (see figure 4).

While a significant number (41%) of E&C companies reported having strengthened their existing control measures to combat economic crime, almost one-third (32%) have planned no specific action in the past two years. Although the E&C sector seems to be suffering particularly from IP infringement and corruption risks, no more intensive measures for strengthening the control and prevention environment had been projected (no specific action planned: 34% vs. across

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all industries 29%). Unfortunately, many companies view better controls as adding significantly to their cost base, without bringing a clear business benefit.

Given this attitude, many E&C companies enhance their controls only on a reactive basis following a serious incident of crime, rather than proactively looking to prevent crime before it happens.

### Top managers more apt to commit fraud, but rates decline amongst middle management

Just over half of those committing serious incidents of economic crime in the E&C sector came from within the company, much in line with the rate across all industries (53% vs. 50% across all industries).

Internal perpetrators of serious incidents were slightly more likely to have come from the ranks of senior/top management this year, with 23% coming from the top ranks (see figure 5), compared to 20% for the E&C industry in 2005, and 20% across all in industries in 2007. This upward trend is worrying, as our global survey results indicate that fraud by senior management is much more likely to have a negative impact on staff morale, particularly when top-ranking offenders are seen to have been let off lightly.

A more encouraging sign is the drop in the number of frauds perpetrated by middle management – just 25% of frauds in the E&C industry were attributed to middle management employees this year, compared to 40% in 2005. As we noted in 2005, this category includes project managers with very wide-reaching discretion over capital projects. As project managers often have ultimate responsibility for bringing a project in on-time and on-budget, opportunities may arise to by-pass controls. The drop in fraud at this level may suggest improved controls in the supply chain where the majority of a contractor's expenditure occurs.

Overall individual causes of fraud were ranked more highly than corporate causes; the most frequently cited corporate causes included 'insufficient internal controls' and 'low commitment to the company'.

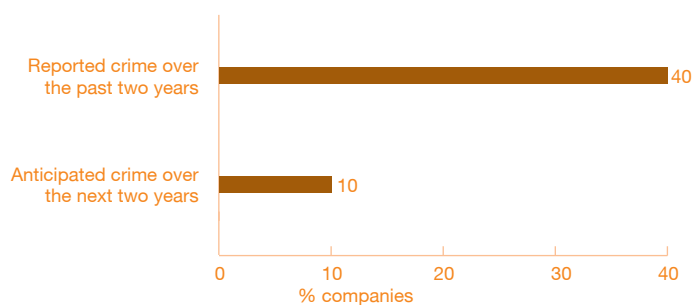
Corporate changes can increase the risk of future fraud. While overall the level of significant changes in company structure for the E&C industry was almost identical to that seen across all industries (at least one change: 54% vs. 55% across all industries), the rate was significantly higher in Central and Eastern Europe, where 63% of companies

reported structural changes. This level of transformation may in part explain the higher level of economic crime seen in the region. Significant changes can alter company structures substantially, and control systems may struggle to keep up, creating increased opportunities for potential offenders.

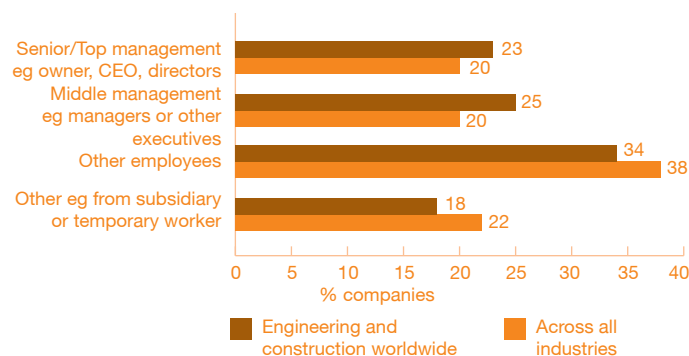
### Future outlook

E&C industry executives are looking to expand their global footprint – in the E&C industry supplement to our *11th Annual Global CEO Survey: Compete and Collaborate*, we found that 28% of CEOs cited geographic expansion as the main opportunity to grow their business over the following 12 months, compared to 19% of peers across all industries. But entering new markets means encountering new risks. Some of the most promising markets – such as Central and Eastern Europe and China – pose the greatest risks, particularly around corruption and bribery and intellectual property infringement, two types of economic crime which pose particular challenges for the industry.

#### 4 Engineering and construction executives' perception vs. reality: Actual and anticipated levels of economic crime



#### 5 Level of perpetrator of most serious incidents of economic crime



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## Definitions of economic crimes

Due to the diverse descriptions of individual types of economic crime in countries' legal statutes, we developed the following categories for the purposes of this survey. The descriptions were read to each of the respondents at the start of the survey to ensure consistency.

### Fraud/economic crime

The intentional use of deceit to deprive another of money, property or a legal right.

### Asset misappropriation (inc. embezzlement/deception by employees)

The theft of company assets (including monetary assets/cash or supplies and equipment) by company directors, others in fiduciary positions or an employee for their own benefit.

### Accounting fraud

Company accounts are altered or presented in such a way that they do not reflect the true value or financial activities of the company.

### Corruption and bribery (inc. racketeering and extortion)

Typically, the unlawful use of an official position to gain an advantage in contravention of duty. This can involve the promise of an economic benefit or other favour, the use of intimidation or blackmail. It can also refer to the acceptance of such inducements.

### Money laundering

Actions intended to legitimise the proceeds of crime by disguising their true origin.

### IP infringement (inc. trademarks, patents, counterfeit products and services, industrial espionage)

This includes the illegal copying and/or distribution of fake goods in breach of patent or copyright and the creation of false currency notes and coins with the intention of passing them off as genuine. It also includes the illegal acquisition of trade secrets or company information.