Business Interruption
Report by: Swiss Re

Protecting the value of an enterprise

Fundamentals: -
Business protection is particularly important if the consequences of potential disruptions threaten to exceed supportable limits. It contains four essential elements:

Property
Property such as buildings, machinery, raw materials, work-in-progress and finished products that could be damaged, destroyed or become unusable in any other way.
Income
Revenue generated by the business, which is often reduced or cut off completely in the event of a loss, thereby affecting the company income.
Employees
May be affected by sickness or accident, resulting in a financial burden for the company.
Third party (liability) Claims
Business activities can also cause damage to third parties. If indemnity has to he paid; the company assets are at risk, e.g. in the case of product liability claims.

Property & Income
Determining the insurable value for income is a more difficult and intricate process. The manufacturing of the finished product in a series of stages from raw materials and semi-finished goods. The production flow becomes thicker after each stage of production i.e. the value of the product increases with each manufacturing stage.
The value of the production flow comprises both variable costs - which depend on the volume of goods manufactured - and fixed costs, such as capital costs, maintenance costs, rent, etc. This value also includes the profit the company stands to earn from the sale of its finished products.

Susceptibility to disruptions
Although the *type* of potential disruptions to small businesses is not hugely different from those threatening larger companies, the *frequency* of potential disruptions increases in proportion to the size of the entreprise. This is because the larger number of internal and external business units involved results in a bigger network and therefore greater interdependence.

Internal causes
In Serial Production
The method and conditions under which a production company manufactures its goods determine how susceptible it is to business disruption. In serial production each of the machines is essential for manufacturing the finished product. Breakdown of just one machine leads to a total production stoppage. In serial production, the effects of a disruption are therefore usually severe: any loss - no matter how slight - can bring the entire production to a stand still.

In Parallel Production
Parallel production reduces vulnerability to malfunctions: The same operations (work stages) are spread between several machines. the sum of the individual machine capacities per work cycle amounts to 100%. If. For example, machine K40 were to fail, production would drop by about 40%, but 60% of the total output would still be maintained. If, as often happens nowadays, a bigger and more powerful machine replaces several smaller ones, companies inevitably become more prone to disruptions.

In parallel production, capacity utilization also plays an important role:
Should certain systems not be working at full capacity, the performance of the others can be stepped up if one of these systems breaks down, for example. A production plant with parallel facilities not operating at full capacity is therefore less susceptible to disruptions.

Apart from the physical arrangement and capacity utilization of the production plant, the following factors are also important in determining how prone a business is to disruptions:

The fire hazard in general
- Repair times for damaged buildings and machines
- procurement times for replacement machines or parts
- the degree of dependency on:
  - Computers for process control
  - Certain interrelated operational premises
  - Special work conditions such as (lust-free or temperature-controlled climates (in the manufacture of semiconductors, for example)

External causes

- A breakdown in the public electricity, gas or water supply causes a production stoppage.
- A hold-up in the supply of raw materials impairs production or even causes a complete standstill.

Here it is worth pointing out (just-in-time) production, which aims at reducing stock. Although this method means less capital is tied up. It makes the business much more susceptible to risk: businesses adopting just in-time methods do not have any stock in reserve to cushion potential disruptions. Manufacturing companies frequently attempt to pass on costs incurred through late deliveries onto suppliers, by imposing severe contract penalties.

How time affects the consequences of a disruption

The extent of the business interruption depends on the time taken to restore the company commercial operational readiness, i.e. so that it can achieve normal financial results. This includes
- The restoration of any buildings affected by the loss event (delays are possible here, such as the time the authorities take to issue building permits, or the effects of strikes)
- The repair or replacement of machines and installations (Are spare parts available, plus the skilled engineers to fit them? How long will it take to (deliver any spare parts?)
- The replacement of damaged raw materials, work-in-progress os finished procducts.

Once the damage to property is repaired, further delays are possible, because the output of intricate production systems can only be stepped up gradually to target capacity. In addition, it may take some time to win back customers who has gone over to the competition - If they return at all.

As soon as the damage to property is repaired and production starts up again, this is known as technical operational readiness. Commercial operational readiness, on the other hand, is when the company is once again able to achieve its normal financial results.

Loss minimization

There are a number of ways to cushion the consequence of Stoppage and the ensuing business interruption:
- Utilizing spare capacity In a different part of the Same company;
- Utilizing spare capacity In different company: competitors are often willing to help out, as long as company has generally acted In a (friendly) way to competitors In the past.
- Example: Damage In sugar facboay A brings production to a standstill. The sugar beet to be processed Is switched to sugar factory B. Additional costs **-** Incurred for transportation and overtime (extra shifts), but factory A averts a reduction in turnover.
- Temporary facilities such as prefabricated or Inflated structures, or tents.
- Procuring replacement machines immediately available.
- These measures may prevent or attenuate a decline in sales. Whether they help to reduce an Interruption loss depends on the level of Increased costs.

The success of such measures depends to a large extent on whether contingency and business continuation plans have been made, managers are trained in disaster scenarios and employees can be persuaded to put in an extra effort. Another factor, which should not be underestimated, is the way in which management communicates with staff, clients and the public when an incident occurs.

The Income at stake

There are two types of costs
- Variable costs, which are cost, related proportionately to production activities.
- Fixed Costs, which are costs, unaffected with the productions activities.

The fall in production volume results from the extent of the decline in production and the duration of the stoppage. The amount of fixed costs accrued during the stoppage also (depends to some extent on how long the stoppage lasts; for example, it may not l) e necessary to pay some (or all) salaries once the period of notice expires.

As a rule enterprises try to reduce the impact of a potential disruption through special measures. This is particularly the case if there are fears of a permanent loss of market share or if the company has a commercial obligation to meet (e.g. in electricity supply or public transport). This i-nay mean a company incurs additional costs besides the fixed costs. Depending on the circumstances, these expenses may improve or further impair the operating result.

Business interruption may therefore at best result in a lower net profit or a break-even result. If the stoppage leads to an operating loss, however, this has to be covered from shareholders equity In the worst case, a loss can extend to the entire net profit and all the fixed costs.

Given the above, we can see that the income at stake comprises the fixed business costs plus the lost operating profit (net profit), or put another way the company turnover less the variable costs, i.e. the contribution rnargin. In BI Insurance the common term is (gross profit).

Insurance Solutions

Types of cover

In property insurance there are two ways of covering damage to property and associated consequential losses: named perils and all risks covers. The difference between these two types of cover is that with named perils the insured property is only insured against explicitly named and listed events. With all risks cover, all losses are covered that arise from direct, unforeseeable and sudden causes. As long as they have not been explicitly excluded from the policy.

In the international insurance industry the basic cover is often known as (FLEXA): Fire, Lightning, Explosion, Aircraft. The generic term (extended coverage) is frequently used for additional risks.

Covered risks

The following insurable risks are generally covered by a commercial insurance policy:

Basic coverage (FL EXA)
- Fire
- Lightning
- Explosion
- Aircraft or space vehicles (or parts thereof) crashing or being forced to make an emergency landing

Extended coverage
- Smoke
- Sprinkler leakage
- Damage from liquid/melted materials
- Vehicle impact
- Building collapse

Political perils
- Malicious damage/vandalism
- Strike/lock-out
- Riot/civil commotion
- Looting
- Terrorism
- Sabotage

Natural catastrophes
- Storm
- Flood/high water
- Earthquake

Exclusions

General exclusions are political risks such as war, civil war, and violations of neutrality, revolution, revolt and measures against these situations. Confiscation and nationalization are also excluded, as are losses arising from nuclear fission and fusion.

Criteria for cover

For business interruption to be covered by insurance:

- It must be caused by damage to property following an insured event;
- the property damaged must be vital to the running of the business;
- The damage to property must have been caused at the place of insurance.

Object of the cover

Most covers nowadays provide compensation for loss of operating profit and for any fixed costs Insured that cannot be reduced if a stoppage occurs. The operating profit and the fixed costs insured together make up the gross profit, which is the basis for the sum insured.

The policy also covers additional costs for measures to reduce the consequential losses of business interruption, such as expenditure for temporary buildings and plant, additional work shifts. Overtime and extra costs for air freight. These costs only fall under the basic cover, however, if they relate to the insured BI loss and are therefore considered to be loss reduction costs. Expenses for measures that do not directly re (IUCC the insured BI Loss are only reimbursed if a corresponding agreement has been reached (Additional increase in cost of working, Extra expense etc).

Sum insured

BI following fire Is a full-value insurance the value of the insured interest in the event of a toss is calculated on the basis of the operating profit and the insured costs that the policyholder would have earned without any interruption of business during the indemnity period. The sum insured is always at least one-year s gross profit, even if the indemnity period is less than 12 months. If cover extends for more than a year, the sum insured will be a multiple of the annual gross profit. Since business performance is susceptible to fluctuations and BI following fire cover extends a long way into the future, setting the right sum insured can be quite a complex task. Operating profit and insured costs need to be estimated with the help of data on the current and projected business performance. The sum insured must also take into account the performance in the business year following the current insurance year. As a loss might occur on the expiry date. In order to prevent insureds from paying premiums for the overestimation of business performance, insurers usually offer repayment of premiums to policyholders.

Deductibles

Frequently occurring or minor losses are rare in BI following fire insurance. With most categories of risk, therefore, no minimum deductible is necessary to avoid them. One exception is the oil and petrochemical industry, where stoppages of only a few days are quite common. The resulting consequences must be regarded as normal operating costs. With these risks, deductibles equal to this sort of duration prevent the transfer of operating costs that are not worth insuring.

When calculating the premium reduction for deductibles. It is important to check whether the basic premium still covers frequently occurring or minor losses, or whether these have already been deducted.

There are a number of possible variations:

- A fixed amount of money;
- A percentage of the loss;
- a time-based deductible: either the policyholder hears his own Losses during this period, or the deductible is fixed in proportion to the overall interruption tune, and the policyholder hears the resulting share in the loss;
- A waiting period expressed in days: if the stoppage exceeds the agreed waiting period, the deductible no longer applies;
- A combined deductible for property and business Interruption loss.

Premiums

The BI following fire premium is basically (Ieterlflined by:

- the scope of BI following fire coverage (insured perils, indemnity period, policyholder deductible),
- the fire risk associated with the business,
- Susceptibility to business interruption and
- Potential loss reduction measures.

Extensions of coverage

Extra expense
Usually insurance against extra expense is an addition to the standard BI following fire policy. It covers costs incurred in addition to the loss-reduction expenses. If a company suffers damage to property and suffers no (or only an insignificant) loss of earnings, but expects to incur additional costs for keeping the business going, it may only purchase cover for these extra expenses. The policy therefore covers the extra expense incurred to maintain business operations. This type of insurance is suitable for service companies, especially for organlzatlons such as hospitals, post offices or electricity companies, which have to provide a service under any circumstances. Extra expense coverage alone may also be suitable for companies with a number of separate plants not operating at full capacity who are in a position to cushion any loss of earnings by swapping production sites within the company (e.g. oil companies, wholesale companies).

Other extensions to cover
There are a number of other important extensions to BI following fire insurance
- Business interruption as a result of denial of access - for example, when a shopkeeper cannot reach his premises because a fire in an adjacent building bars access.
- Delays caused by orders from public authorities (conditions on rebuilding or business activities). After a loss occurrence the authorities may impose environtmental protection regulations, which exacerbate the financial impact of the loss.
- Failure of public utilities supplying electricity, waters and gas.
- External dependencies on suppliers, customers or other third parties (suppliers or customers extension risks.

The amounts insured under extended covers should be restricted by applying submits and taken into account when calculating ptetniuins.
Suppliers or customers extension losses resulting from internal dependencies are insured as long as the Supplying/purchasing Company is covered by the same policy.

Special features of the natural catastrophe risk
Whereas the principles governing the fire risk can be more or less applied to the BI risk as well, there are other factors to take into consideration when insuring natural catastrophe risks. Cover for earthquake. Storm, or flood damage may only he provided if special rules are observed, such as accumulation control, since:
- an extensive area can be affected in which the infrastructure is permanently damaged
- Demand for repair equipment and services is likely to escalate, pushing up prices significantly;
- Regional alternatives (e.g. switching production sites) may either be nonexistent or too expensive after natural catastrophes;
- Sales and supplier markets for certain products and services can (collapse completely;
- State regulations may delay the resumption of production.

Estimated maximum loss
The assessment of the estimate maximum loss is a complex process for large corporations. The thorough analysis involved not. Only requires business management and technical know-how but also experience in risk management. This task not only comprises estimating the business consequences of damage to property with the help of loss scenarios, but taking into account loss-reduction measures and assessing their effectiveness.

Determining the EML property damage and during interruption losses is not simply a question of totaling the individually assessed EML amounts together. The secret is to use the maximum combined amount **(=** maximum sum of estimated BI loss and estimated property loss) arising from the same loss event.