



Acquiring Technological Knowledge

Table 1 Different mechanisms for acquisition of technology

Mechanism	Strengths	Weaknesses
<i>Mobilizing tacit knowledge</i>	Internal, highly specific knowledge Hard to copy	Hard to mobilize Needs processes to articulate and capture
<i>In-house formal R&D</i>	Strategically directed Under full control Learning by doing Knowledge remains inside the firm	High cost and commitment Risks - no guarantee of success
<i>In-house R&D and network links outside</i>	As above but with less control over knowledge unless there is a clear contract on intellectual property rights	Costs and risks
<i>Reverse engineering</i>	Lower costs Offers insight into competitors processes and products Knowledge can be inferred - but needs a level of skill to do so	Depends on ability to infer knowledge Knowledge may be protected anyway - e.g. in patent or copyright
<i>Covert acquisition (industrial espionage!) plus internal R&D</i>	Fast access to knowledge and relevance of that knowledge can be managed through internal capability	Illegal! Costs of internal R&D
<i>Covert acquisition</i>	Fast access to knowledge	Illegal Risk of not being able to translate external knowledge to internal needs
<i>Technology transfer and absorption</i>	Easier access to knowledge - someone else has developed and packaged it	Costs Risk of not understanding or being able to make full use of technology May be prohibited from further exploration and learning by terms of licence, etc.
<i>Contract R&D</i>	Speed and focus	Costs Lack of control Lack of learning effect - someone else is carrying out the experimentation and learning process
<i>Strategic R&D partnership</i>	Links complementary knowledge sets Enables complex problems to	Costs Risks in partnership not working



	be addressed	Lack of learning since technology development is carried out by other parties
<i>Licensing</i>	Fast access to knowledge	Costs Restricted learning - may also be prohibited by terms of licence
<i>Purchasing</i>	Fast access	Cost Lack of learning
<i>Joint venture</i>	Links complementary knowledge sets Enables complex problems to be addressed	Costs Risks in partnership not working Lack of learning since technology development is carried out by other parties
<i>Acquisition of a company with the knowledge</i>	Fast access to knowledge Control over knowledge	Costs May not be able to absorb knowledge

Table 1 lists a wide range of possible mechanisms which firms can use to obtain knowledge resources to support their innovative activity. Think about a firm (your own or one with which you are familiar) and try to list which of these mechanisms are used. What do you see as the particular strengths and weaknesses of each - and what might you do to compensate for some of the weak areas and build on the strengths? Put your answers in the following table.

Mechanism	Strengths	Weaknesses