Specific skills gaps

	Development	Tech transfer	Commercial
Managerial			Informatics – data for decision making Quality Assurance
Indirect support		Broad cross functional expertise (PAT, MVA) Process Engineering Modelling	Automation and Control
Direct support			Data manipulation Specific platform operation expertise

Mitigations

- Within company rotational assignments to develop broad multifunctional skills
- More use of academic consortium to develop and recruit skills
- Skills mapping across the development and manufacturing cycle
- FDA approach of web based modules built with academic and industry experts – expand access to industry
- Transferable skills from other sectors – do we value compliance experience over manufacturing paradigm experience; especially for automation and control
- Use of virtual training environments for operator level training

Detailed skills mapping

Early development	Late phase development	Phase III	Filing and launch	Routine manufacture
• Flow chemistry • Modelling	• DoE • Process Engineering	• Process Engineering	• Automation and Control • CM Regulatory Expertise	• CM Quality Assurance