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# *Impact of Moderation through the Virtual Enterprise Life Cycle*

*K. Popplewell and J. A. Harding*

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# *Virtual Enterprise*

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*A formal but temporary collaboration between autonomous partners to conceive, design, market, manufacture, and deliver a specific product (or range of products).*

*Partners remain independent and possibly competitive in all other activities than those related to the product.*

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# *Virtual Enterprise Characteristics*

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- ✍ To achieve agility, collaboration on the product is close, well co-ordinated and open.*
- ✍ Partners may compete in manufacture and supply of other products, so not all information can be shared.*
- ✍ The life-cycle of the VE is limited to the life-cycle of the product.*
- ✍ Partners may join or leave during the life of the VE.*
- ✍ VE partners include those responsible for the initial design of the VE and its manufacturing and logistics systems.*

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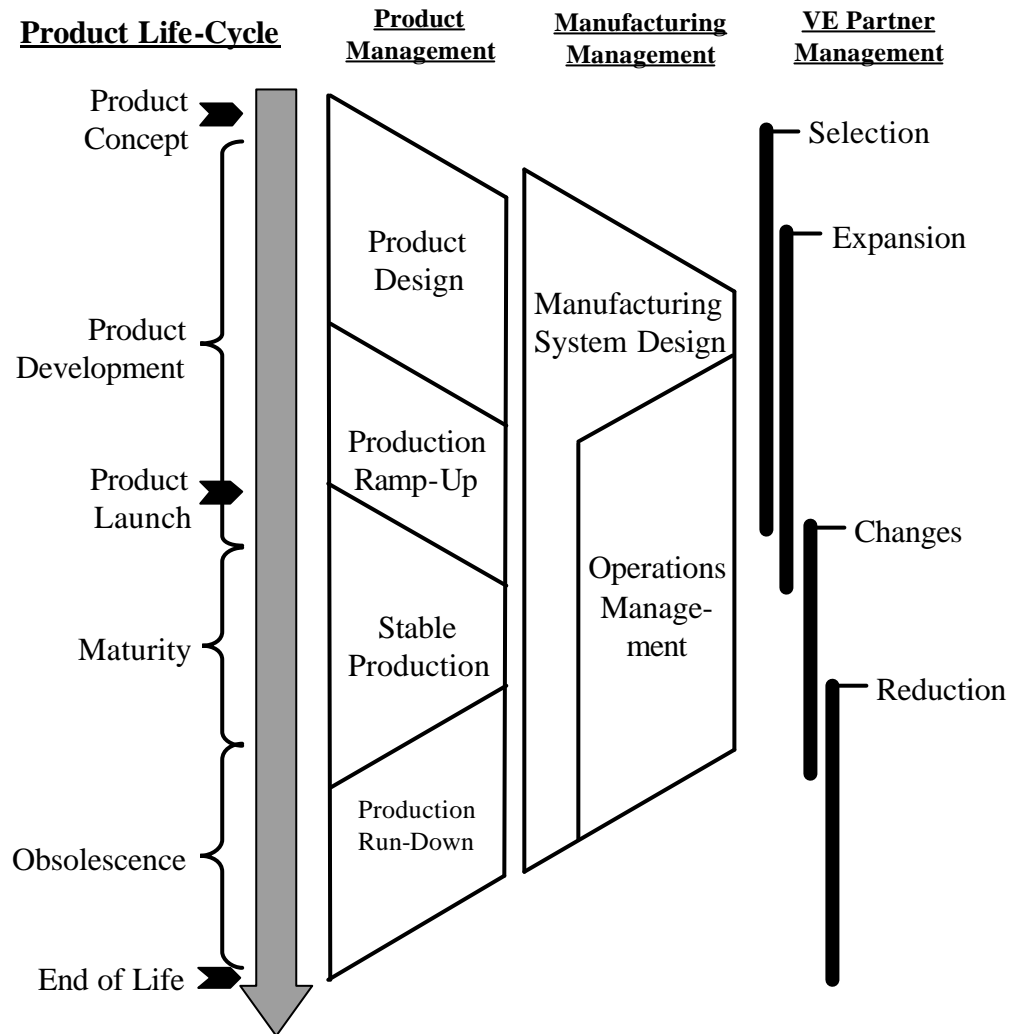


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# Virtual Enterprise Life Cycle



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# *Manufacturing System Engineering Moderation*

*Recognising conflicting decisions and managing resolution*

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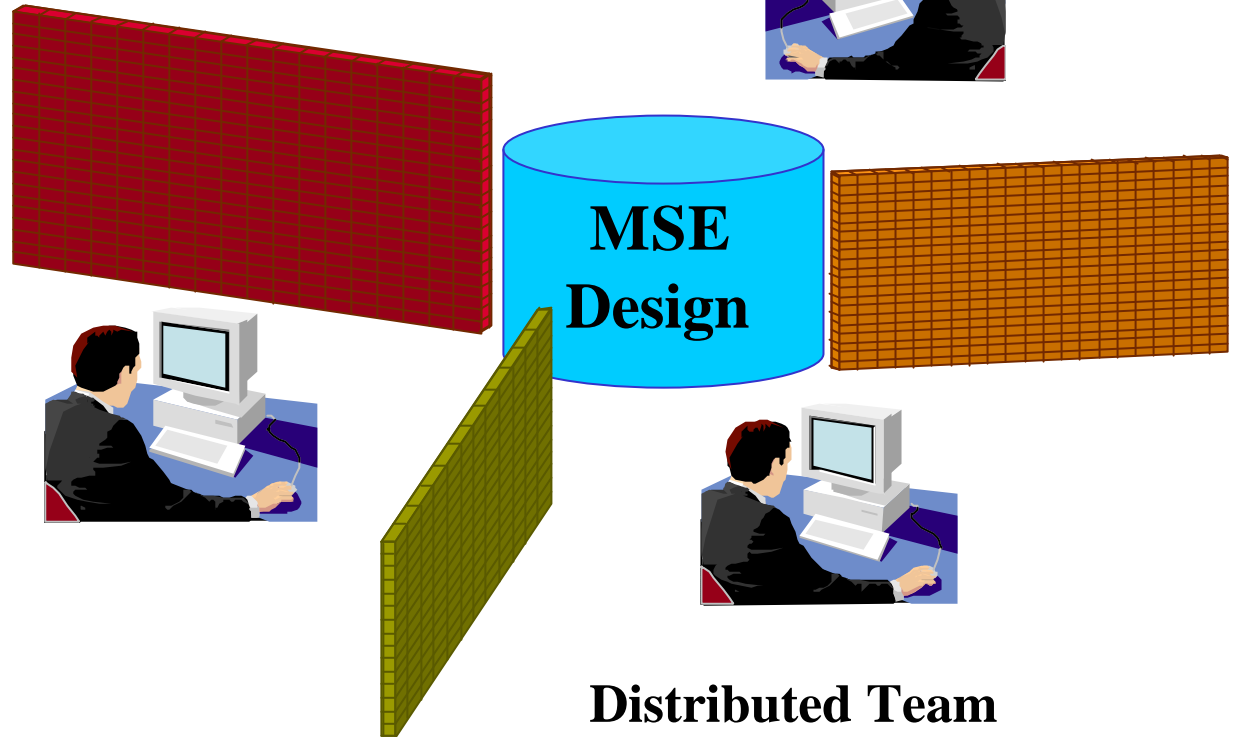
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# *MSE Moderator (MSEM) Concept*

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**Small Co-located Team**  
**High Level of Awareness**



**Distributed Team**  
**Low Level of Awareness**

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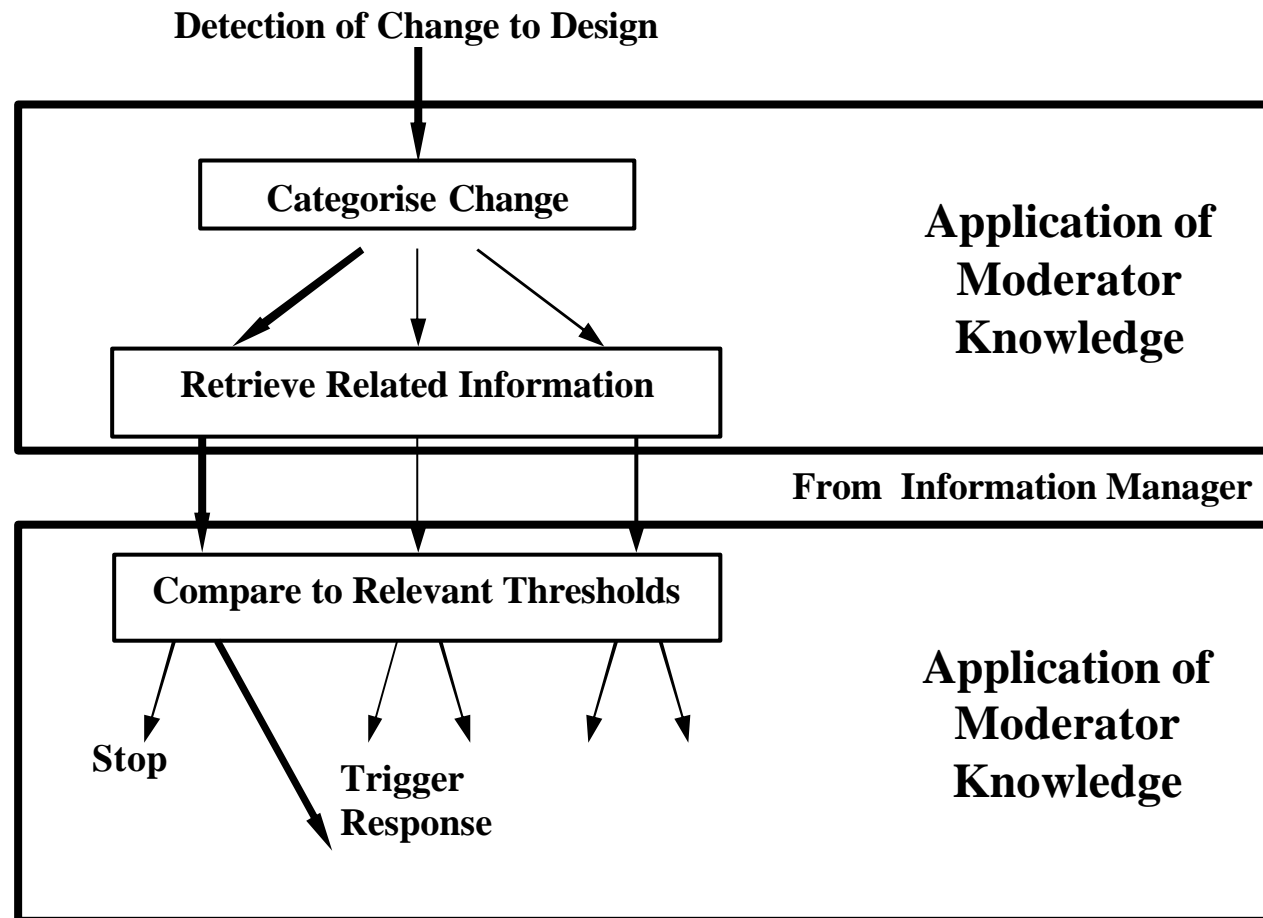
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# Example of MSE Moderation (Conflict Recognition)



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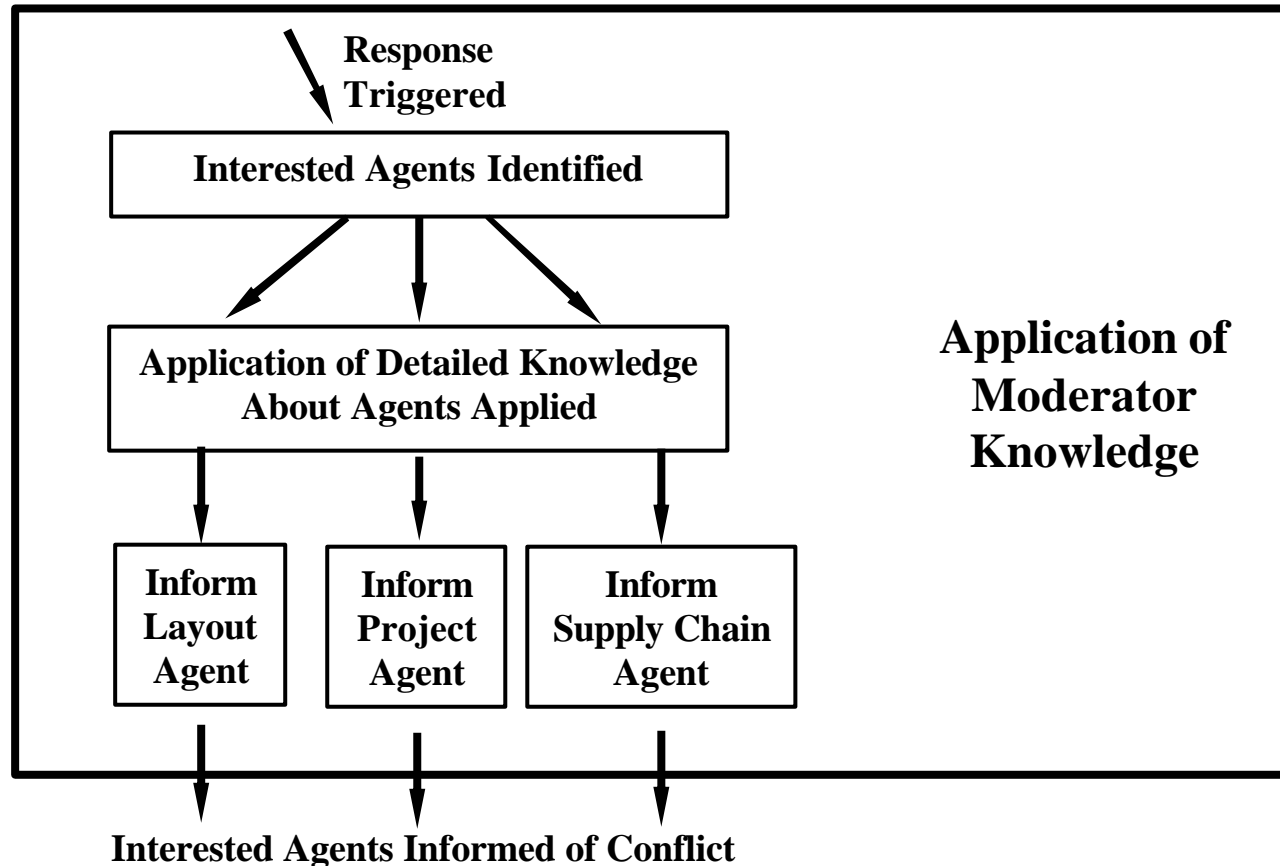


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# *Example of MSE Moderation (Conflict Resolution)*



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# *MSE Moderation Requirements*

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- ✍ MSEM must detect any significant change to the MSE design.*
- ✍ BUT it must suppress reaction to incomplete changes or “What if ... ?” design experiments.*
- ✍ Design history must be maintained and available to the MSEM.*
- ✍ The MSEM must be able to retrieve information which its own knowledge deems related to the change under consideration.*

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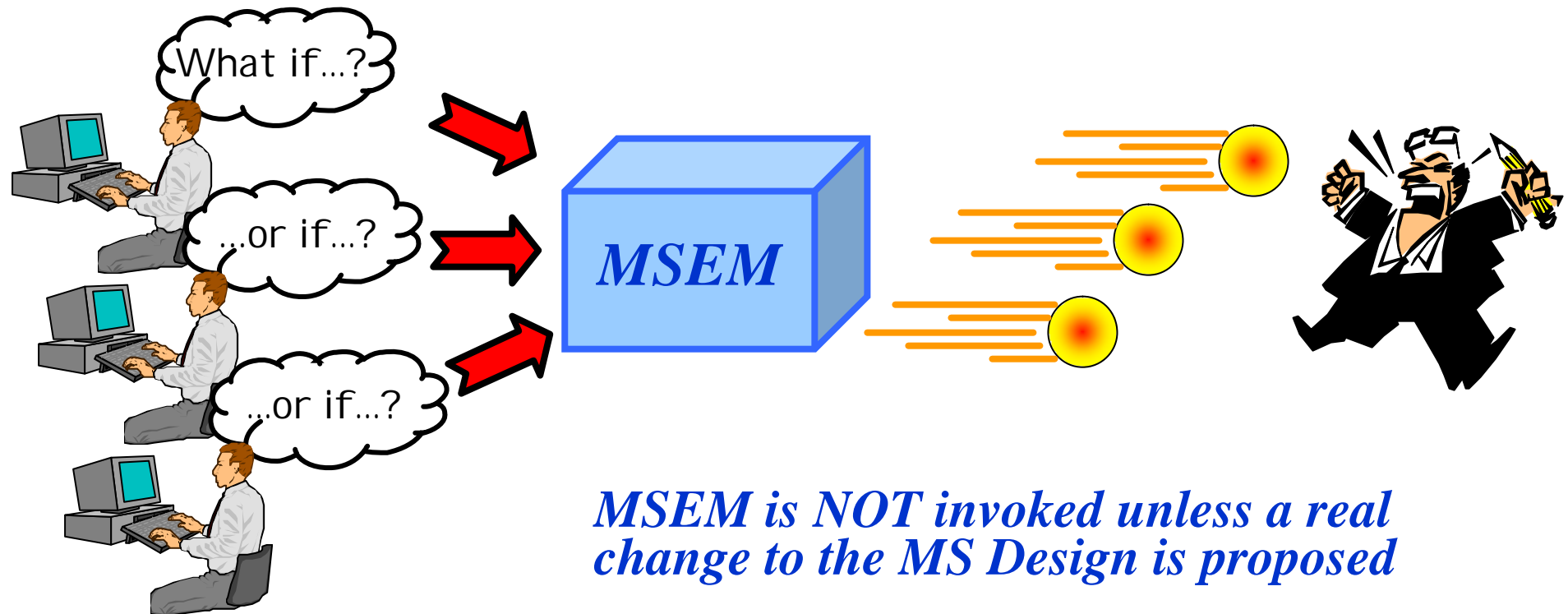


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# *MSE Moderation Requirements: Granularity*

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## *Suppressed reaction to speculative change to MS design*



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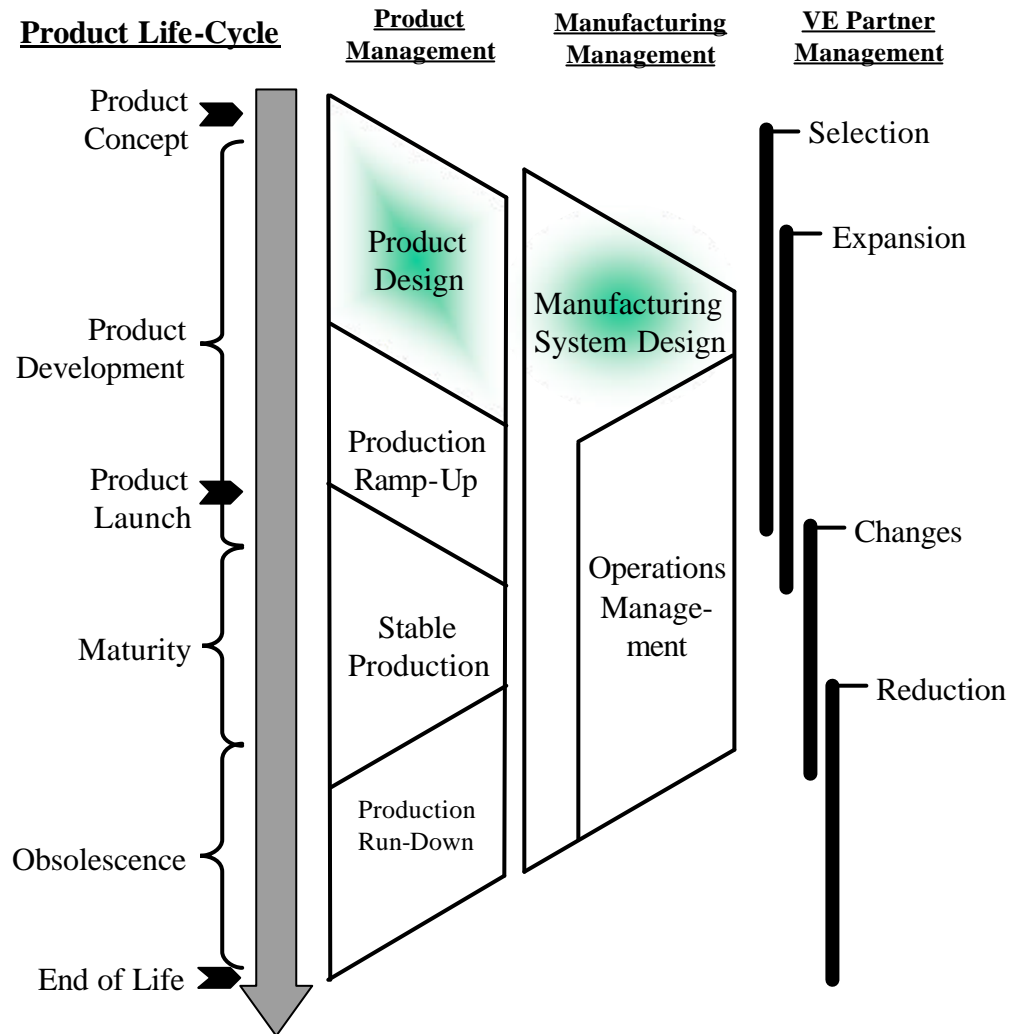


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# Virtual Enterprise Life Cycle – MSE Moderation



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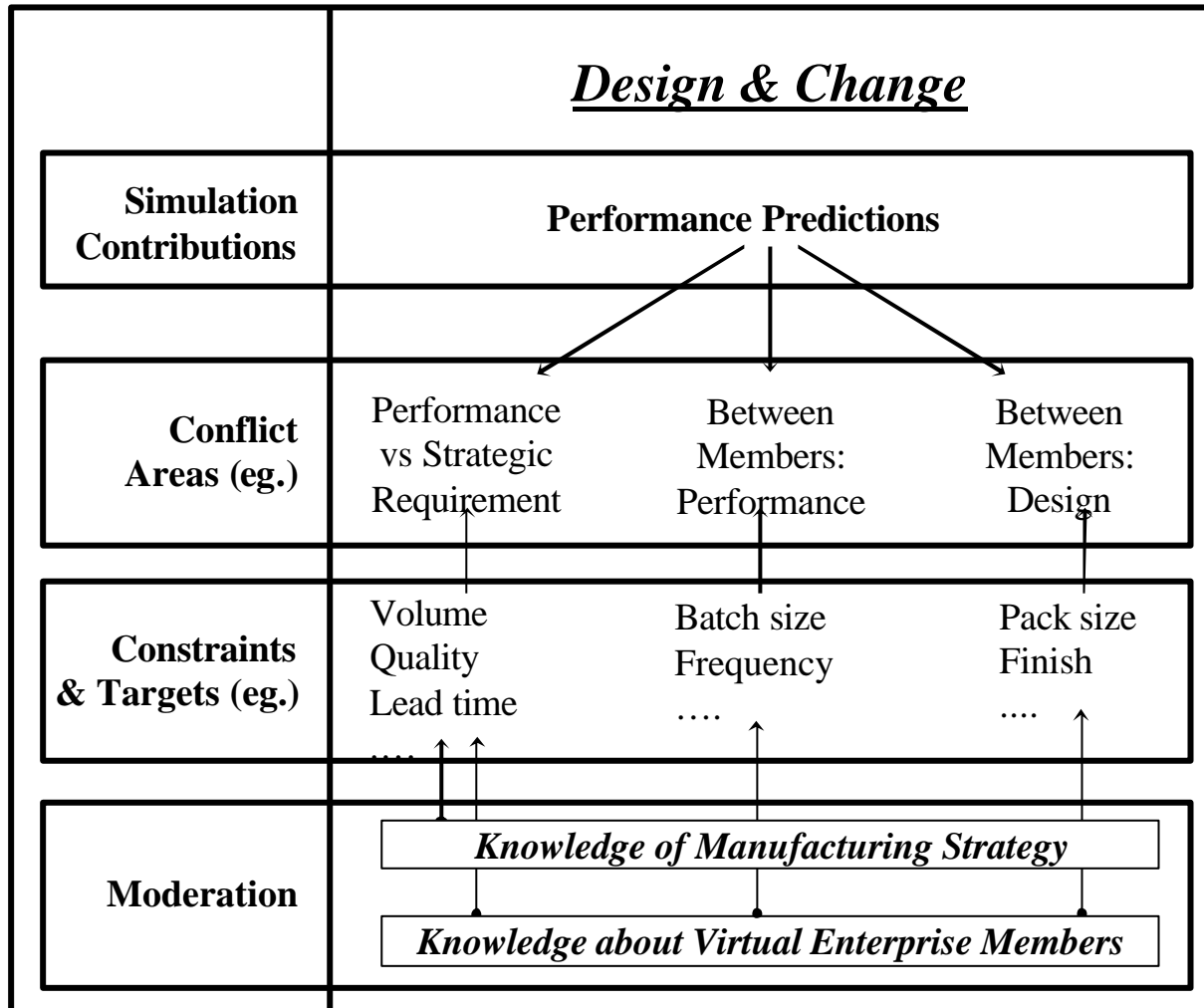


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# Virtual Enterprise Design Moderation



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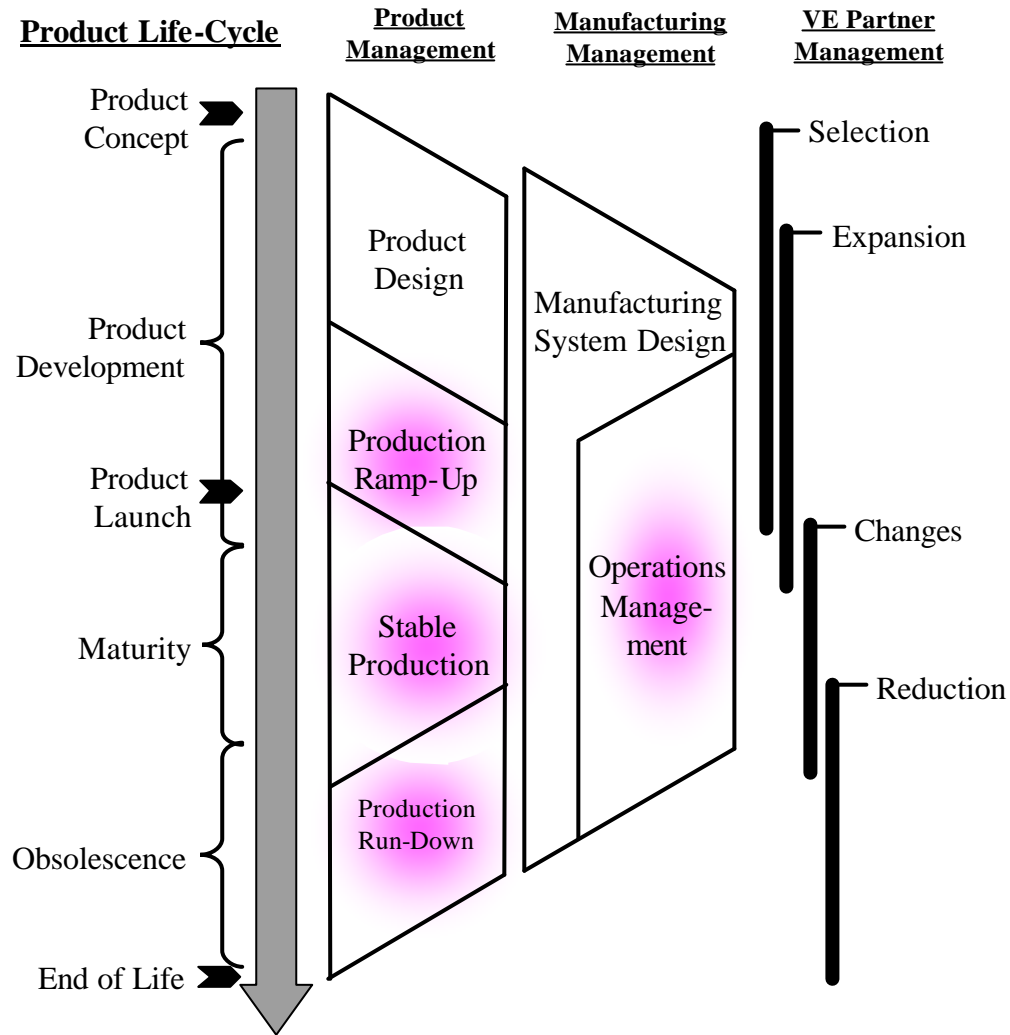


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# Virtual Enterprise Life Cycle



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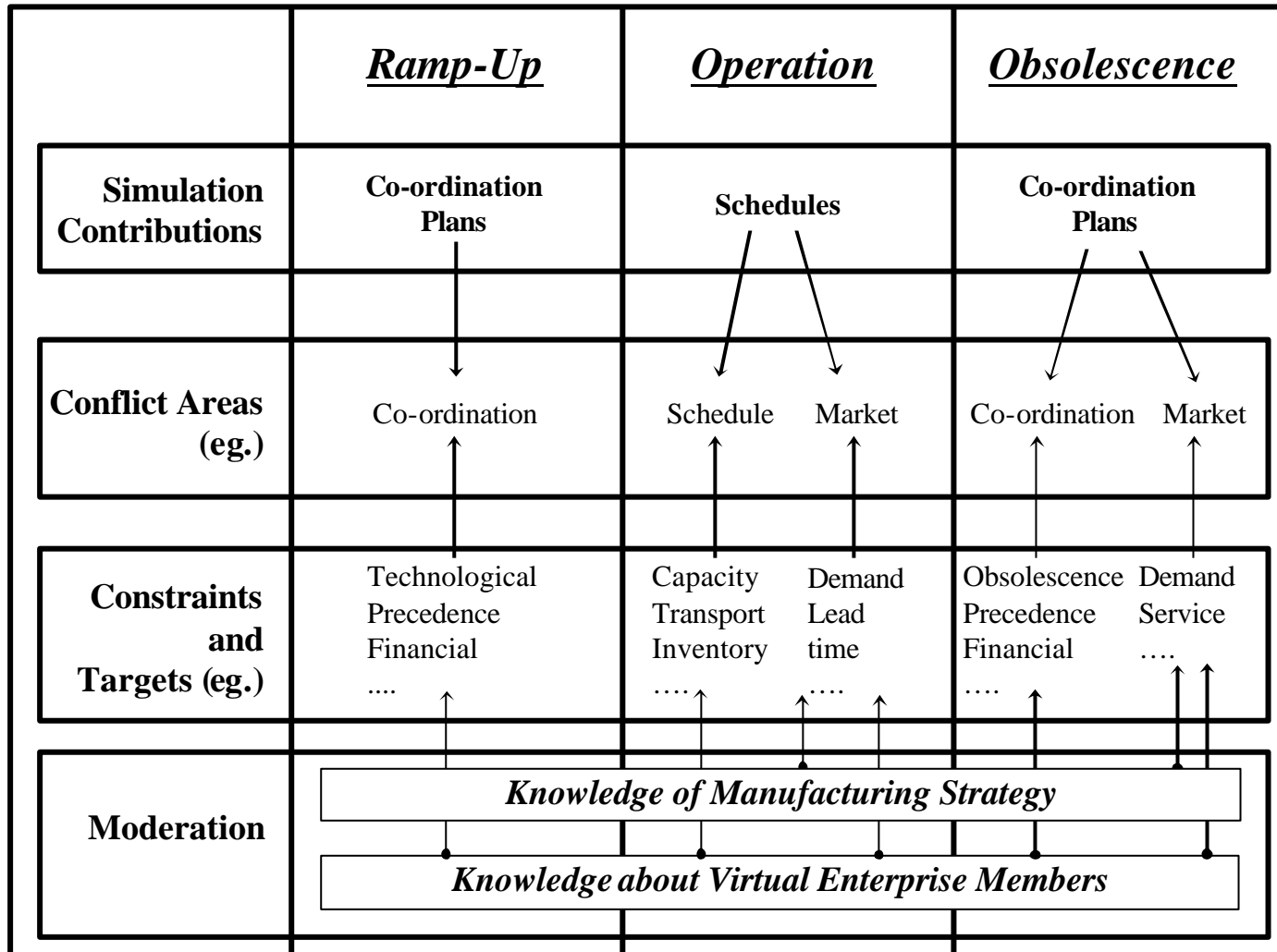
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# Moderation in VE Ramp-up, Operation & Obsolescence



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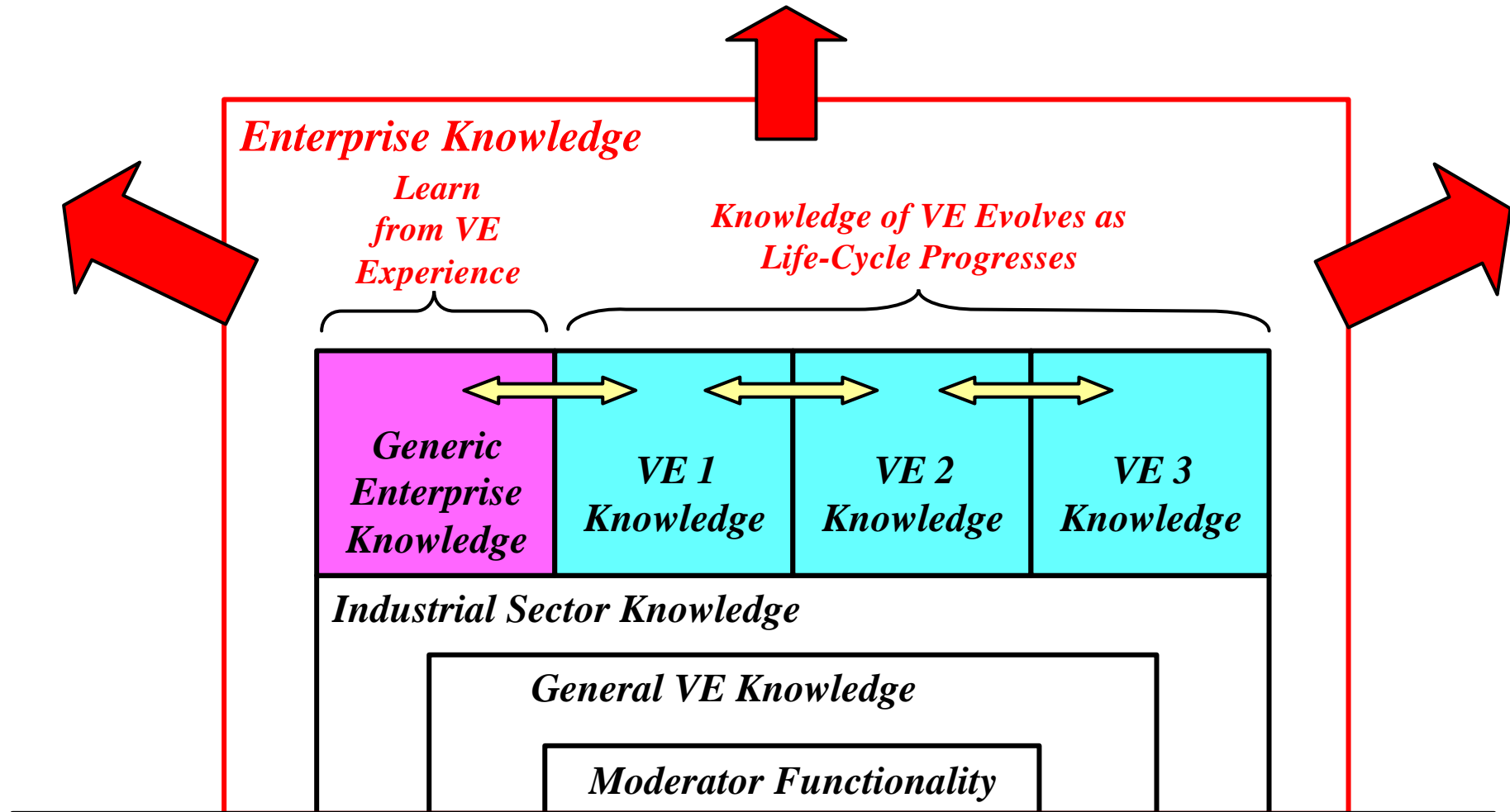


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# An Evolving Moderator



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# Summary

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- ✍ Distributed decision-making is an integral part of VE design and operation.*
- ✍ BUT distributed decision-making can lead to conflicting decisions however positive the collaboration.*
- ✍ Moderators can identify decision conflict as it arises, and can orchestrate a dialogue leading to resolution - minimising the damage.*
- ✍ Moderators already demonstrated in VE design and change.*
- ✍ Moderators offer the potential to reduce operational decision conflict at all stages of the VE Life-Cycle.*

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