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### JUST-IN-TIME PRODUCTION METHODS: KANBAN – SUMMARY NOTES

Kanban is a new technique for managing a software development process in a highly efficient way. Kanban underpins Toyota's "just-in-time" (JIT) production system. Although producing software is a creative activity and therefore different to mass-producing cars, the underlying mechanism for managing the production line can still be applied.

Kanban is incredibly simple, but at the same time incredibly powerful. In its simplest incarnation, a Kanban system consists of a big board on the wall with cards or sticky notes placed in columns with numbers at the top. Limiting work-in-progress reveals the bottlenecks so you can address them.

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The cards represent work items as they flow through the development process represented by the columns. The numbers at the top of each column are limits on the number of cards allowed in each column.

The limits are the critical difference between a Kanban board and any other visual storyboard. Limiting the amount of work-in-progress (WIP), at each step in the process, prevents overproduction and reveals bottlenecks dynamically so that you can address them before they get out of hand.

### WORKED EXAMPLE FOR A FIRM ENGAGED IN SOFTWARE DEVELOPMENT

The board (right) shows a situation where the developers and analysts are being prevented from taking on any more work until the testers free up a slot and pull in the next work item. At this point the developers and analysts should be looking at ways they can help relieve the burden on the testers.

Notice that some of the columns are split in two, to indicate items being worked on and those finished and ready to be pulled

6	3		5		3	5
Pending	Analysis		Development		Test	Deploy
	Doing	Done	Doing	Done		
Sticky note		Sticky note		Sticky note	Sticky note	
Sticky note		Sticky note		Sticky note	Sticky note	
Sticky note		Sticky note		Sticky note	Sticky note	
Sticky note		Sticky note		Sticky note	Sticky note	
Sticky note		Sticky note		Sticky note	Sticky note	

## 5.3 Production Methods – Kanban: Summary Notes

by the downstream process. There are several different ways you can layout out the board. This is a fairly simple way. The limits at the top of the split columns cover both the "doing" and "done" columns.

Once the testers have finished testing a feature, they move the card and free up a slot in the "Test" column.

Now the empty slot in the "Test" column can be filled by one of the cards in the development "done" column. That frees up a slot under "Development" and the next card can be pulled from the "Analysis" column and so on.

