

## Appendix A1: Original 14 “RP Communicative Capability Usefulness” Items Reviewed in Pilot Phase (originated in APICS forum discussions)

*For each item: (a) Rate the extent to which it represents a feasible mechanisms for meaningfully communicating information in production settings; (b) Rate the extent to which you believe firms have made use of resource planning systems in such a fashion.*

- 1) The communication of production requirements among employees \*\*
- 2) The communication of production contract information among employees
- 3) The communication of production requirements among employees \*\*
- 4) The identification of product-order handling difficulties by employees
- 5) The identification of production problems and issues by employees \*\*
- 6) The identification of production conformance quality levels by employees
- 7) The flagging of production quality control concerns to employees
- 8) The flagging of production inventory account imbalances to employees
- 9) Goal-oriented production-process redesign collaboration among employees
- 10) Goal-oriented production planning and collaboration among employees \*\*
- 11) Production activity coordination and scheduling among employees \*\*
- 12) Production activity critiquing and debate among employees
- 13) The dissemination of forecasted demand reports to production employees
- 14) The dissemination of forecasted maintenance reports to production employees

*[Note that items marked by ‘\*\*’ met the pilot selection criteria and were used in the subsequent experiment]*

## Appendix A2: Definition of RP systems accompanying each phase of the study

A resource planning system is one of a set of related information technologies (eg. ERP, MRPII, etc.) that provides standardized interfaces for the entry and retrieval of data relating to both within-day and long-term operating horizons. The associated database contains all information relating to the monitoring of inputs, outputs, resources and process descriptors (eg. status, schedules, pre-requisites, etc.) for a range of activities managed. The system ensures that such information may be visible and available to all workers affiliated with these activities.

*Note: This definition was based off of recent personal experience with the implementation of such systems, the past specifications of Davenport (2002), Chase et al. (2001) and Mabert et al. (2003), as well as on direct discussions of such a general definition with several of these authors.*

**Appendix B: Questions administered prior to case summaries and follow-ups**

- 1a. Gender: M / F  
 2a. Age: \_\_\_\_\_  
 3a. Years of Education: \_\_\_\_\_ (e.g., BA, MBA, etc.)  
 4a. Country of birth: \_\_\_\_\_  
 5a. First language: \_\_\_\_\_  
 6a. Years of full-time work: \_\_\_\_\_  
 7a. Industry in which you are currently employed: \_\_\_\_\_  
 8a. Years with current organization: \_\_\_\_\_  
 9a. Current job title: \_\_\_\_\_  
 10a. Number of years in current position: \_\_\_\_\_

*{Past supervisory experience}*

- 11a. Number of employees for whom you have had supervisory responsibility: *Direct:* \_\_\_\_\_ *Indirect:* \_\_\_\_\_  
 12a. Number of months that you have spent in a supervisory capacity of some kind: \_\_\_\_\_

*{Management familiarity with RP Systems}*

**Please rate the extent to which you agree with the following statements about employees in the production unit just described, using the scale below.**

1	2	3	4	5	6	7
highly disagree	moderately disagree	slightly disagree	neither agree nor disagree	slightly agree	moderately agree	highly agree
<b>13a. I have extensive on-the-job experience using ERP systems</b> (Enterprise Resource Planning systems such as those developed by SAP, People Soft, etc.; Resource planning systems that provide access to transactional, planning and scheduling data among multiple functional areas including manufacturing, marketing, sales, purchasing, accounting, human resources, etc.).						
<b>14a. I have extensive on-the-job experience using MRPII systems</b> (Manufacturing Resource Planning systems that provide access to planning mechanisms and scheduling data relating to materials and manufacturing capital and resources, but little data regarding other functional area activities).						
<b>15a. I have extensive on-the-job experience using MRP systems</b> (Materials Requirements Planning systems that provide access to planning mechanisms and scheduling data relating to material inputs, but little information regarding equipment, staff schedules or other functional area activities).						

*{Management past observed usefulness of RP systems}*

**Based on your prior work experience, please indicate your agreement with the following statements regarding the extent that resource planning systems are used to facilitate each of the following activities (7 point scale as above)**

***Based on your prior work experience, planning systems are frequently found to be useful in...***

- 16a. The communication of production requirements among employees.  
 17a. The communication of production recommendations among employees.  
 18a. The identification of production problems and issues by employees.  
 19a. Goal-oriented production planning and collaboration among employees.  
 20a. Production activity coordination and scheduling among employees.

## Appendix C: *Experimental cases and questions administered in second phase*

### *Case summary for Low Interdependency conditioned sub-sample:*

A production unit in a small factory produces a single cellular phone model for Nokia. Each of the ten members of the production unit is responsible for one of ten sequential operations. Factory policy allows large buffer stocks of work-in-process to be maintained between operations. Although all ten individuals are required to work eight hours each day, they can begin and end their activities according to a flexible work schedule because of the buffer-stock policy. Workers at this factory do not have to communicate information regarding color, stock, or equipment to each other because the phone that they make leaves the factory in only one color, cabinet style, and functionality package. All of the workers at this factory have their own equipment, and so do not have to coordinate their use of production facilities. Over the last several years, neither the product design nor the production process has changed.

### *Case summary for High Interdependency conditioned sub-sample:*

A production unit in a small factory produces several cellular phone models for Nokia. The ten members of the production unit rotate responsibility for each of ten sequential operations. Factory policy allows no buffer stocks of work-in-process to be maintained between operations. Although the unit's members are required to work eight hours each day, they must work together to determine work schedule because of the buffer-stock policy. Workers at this factory have to communicate information regarding color, stock, and equipment to each other because the phone that they make leaves the factory in five colors and cabinet styles with ten functionality packages. Because half of the workers at this factory share equipment, they have to coordinate their use of production facilities. Over the last several years, both the design of the product and the production process have changed extensively.

*{Management perceived level of interdependence within experimental context}*

**Please rate the extent to which you agree with the following statements about employees in the production unit just described, using the scale below.**

1	2	3	4	5	6	7
highly disagree	moderately disagree	slightly disagree	neither agree nor disagree	slightly agree	moderately agree	highly agree
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<b>1b.</b> Employees in this unit need information and advice from colleagues to perform their jobs well.						
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<b>2b.</b> Employees in this unit have a one-person job; it is not necessary for them to coordinate or cooperate with others.						
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<b>3b.</b> Employees in this unit need to collaborate with colleagues to perform their jobs well.						
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<b>4b.</b> Employees in this unit need information and advice from one another to perform their jobs well.						
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<b>5b.</b> Employees in this unit regularly have to communicate with colleagues about work-related issues.						
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*{Management assessed usefulness of RP systems within experimental context}*

**Based on the production facility just described, please indicate your agreement with the following statements regarding the potential usefulness of resource planning systems in facilitating the following activities.**

***In the production facility described above, resource planning systems would be useful in...***

<b>6b.</b> The communication of production requirements among employees.
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<b>7b.</b> The communication of production recommendations among employees.
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<b>8b.</b> The identification of production problems and issues by employees.
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<b>9b.</b> Goal-oriented production planning and collaboration among employees.
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<b>10b.</b> Production activity coordination and scheduling among employees.
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