

critical Path Analysis 1. Identifying the critical path Activities with a float of 0 (zero) cannot be delayed without delaying the entire project Such activities represent the "critical path" On the critical path, activities have an equal EST and LFT 18. Identifying the critical path Represents the Critical Path for this Project 3 13 13 1 0 0 A 10 2 10 10 B 3 C 5 D 30 4 18 23 E 12 5 30 35 F 8 6 43 43 G 15 7 58 58 19. Uses of critical path analysis Estimate and minimise project time Support project costing and evaluation Plan and organise resources Prioritise tasks Help provide direction (more motivating? 20. Benefits and drawbacks of CPA Advantages Disadvantages Most importantly – helps reduce the risk and costs of complex projects Reliability of CPA largely based on accurate estimates and assumptions made Encourages careful assessment of the requirements of each activity in a project CPA does not guarantee the success of a project Help spot which activities have some slack ("float") and could therefore transfer some resources = better allocation of resources Resources may not actually be as flexible as management hope when they come to address the network float A decision-making tool and a planning tool – all in one! Critical path analysis ("CPA") CPA is a project analysis and planning method that allows a project to be completed in the shortest possible time 3. The need to plan complex projects Many larger businesses get involved in projects that are complex and involve significant investment and risk As the complexity and risk increases it becomes even more necessary to identify the relationships between the activities involved and to work out the most efficient way of completing the project 4. Information needed for CPA A list of all activities required to complete the project The time (duration) that each activity will take to completion The dependencies between the activities (e.g. activity D cannot be completed until activity B&C done) 5. CPA calculates... The longest path of planned activities to the end of the project The earliest start time (EST) and latest finish (LFT) time that each activity can start and finish without making the project longer Which activities are "critical" (i.e. on the longest path) and which have "total float" (i.e. can be delayed without making the project longer) 6. Activities might themselves have to be broken down into mini-projects Provides managers with a useful overview of a complex project Links well with other aspects of business planning, including cash flow forecasting and budgeting 21. Calculating the float The float is the duration an activity can be extended or postponed so that the project still finishes within the minimum time Calculated as:  $LFT - Activity\ Duration - EST$  16.tutor2u on Facebook 22.