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On the cards

by Erik van Veenendaal

Risk management in agile projects: the PRISMA approach

Erik van Veenendaal explains his product risk assessment meeting procedure

Risk management is the backbone of sequential development models but how does it fit in agile environments? How can we be sure to identify new risks when they emerge and to ensure our understanding of all risks remains accurate?

In agile of course the emphasis must be on team discussion. That's fine for working on development issues where mistakes can be discussed again and fixed. But risk is not by its nature iterative: it is absolute and exists all the time and making mistakes in dealing with it is not acceptable.

Hence the discussion and consensus approach needs to be formalized by the use of a systematic method and process. That's where PRISMA comes in.

Reducing the risk of incorrect risk reduction

The acronym stands for "product risk management". The approach has been developed and proven over many years to support correct identification and accurate analysis of business and technical risks, with the emphasis on those of the highest risk level. PRISMA's risk analysis uses the familiar four-quadrant risk matrix concept and focuses on ensuring that all identified risks are shown in the correct quadrant. It is considered a "lightweight" approach, meaning "straightforward": its consumption of time and resources is low and it produces actionable results, ie a differentiated risk-based approach to testing rather than more and more detailed and unanswerable questions. That makes it ideal for frequent use by those with direct responsibility for product quality, eg agile teams.

The spectrum of speculation

Risk assessment is carried out in a dedicated meeting held between sprints. Where cycle times are short, this may be done once per set number of sprints, and/or when the team feels it desirable, a feeling usually triggered by significant change to the product or availability of new information. It begins with a brainstorming session whose inputs are the user stories, the sprint backlog and input from stakeholders outside the team if needed.

The identified risks are scored by applying the essentials of Planning Poker, a consensus-based estimation technique often used in agile projects. Rather than the many numbered (sometimes in the Fibonacci sequence) and other cards typically used for estimating, PRISMA uses only five types of card, with colours (eg dark green, light green, yellow, orange and red) and/or sequential integers (eg 1 to 5) to represent degree. This simpler

variation helps to avoid too-detailed discussion. That is inappropriate in product risk assessment, which must speculate about future events rather than analysing known facts.

The moderator explains briefly an identified risk and each participant is allowed a short time to contemplate it before selecting a card of the colour that represents his or her estimate of the severity of its impact should it become reality. Independent, individual thinking is sought: peer influence is avoided by not revealing the cards selected until all participants have made their choice. At that point, if the range of colours is narrow (as defined beforehand, eg "no more than 3 adjacent colours"), the moderator takes the median (for example, if there are 2 light green cards and 4 yellow cards, the impact is recorded as yellow).

If the variation is too wide, the participant(s) who have estimated lowest and highest explain their reasoning briefly and, when they have all been heard, all participants are given the opportunity to modify their choice. If variation still remains too wide, the product owner has a "casting vote": he or she chooses a value somewhere in the range.

The procedure is now repeated, but considering likelihood rather than impact. In this case, the lead developer has the casting vote if needed. The meeting then moves on to the next product risk to be assessed.

It is important to keep the meeting moving fast: when a person is asked to give an explanation a timer may be used to limit it. The tendency of some people to be always cautious, or the opposite, may be constrained by giving each participant a fixed number of cards of each type and collecting them so that each card is used only once in the meeting.

After the meeting the assessed risks are plotted on the product risk matrix (see figure 1). Viewed in conjunction with the test approach and "definition of done" for each of the quadrants, this matrix is the sprint test plan ∎
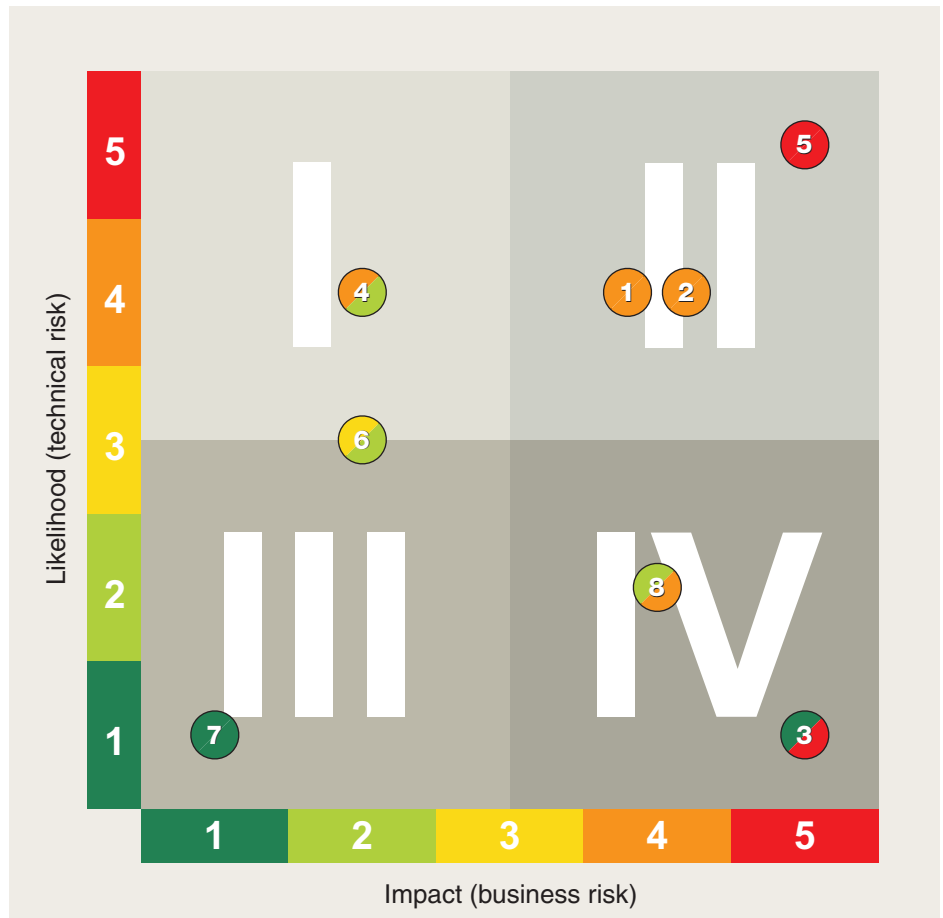

Figure 1: PRISMA product risk matrix

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