Product development process in a machine learning firm

Survey Questions

1) **Designation**

**Designation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Designation** | **No. of Respondents** | **Percentage (%)** |
| 1 | Senior Manager | 5 | 5 |
| 2 | Technical Manager | 10 | 10 |
| 3 | Non-Technical Manager | 3 | 3 |
| 4 | Technical staff | 70 | 70 |
| 5 | Non-technical staff | 12 | 12 |

2)Age

**Age**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Age** | **No. of Respondents** | **Percentage (%)** |
| 1 | Below 30 years | 57 | 57 |
| 2 | 30 – 39 years | 41 | 41 |
| 3 | 40 – 49 years | 2 | 2 |
| 4 | Above 49 years | 0 | 0 |

3)Gender

**Gender**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Gender** | **No. of Respondents** | **Percentage (%)** |
| 1 | Male | 51 | 51 |
| 2 | Female | 49 | 49 |

Source: Primary data

4)Total industry experience

**Total industry experience**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Total industry experience** | **No. of Respondents** | **Percentage (%)** |
| 1 | Below 2 years | 26 | 26 |
| 2 | 3 – 5 years | 31 | 31 |
| 3 | 5 – 10 years | 25 | 25 |
|  | 10 – 20 years | 18 | 18 |
| 4 | Above 20 years | 0 | 0 |

5) Which machine learning domain do you work generally?

**Machine learning domain**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Machine learning domain** | **No. of Respondents** | **Percentage (%)** |
| 1 | Computer vision | 82 | 82 |
| 2 | Genomics | 83 | 83 |
| 3 | Chatbots | 86 | 86 |
| 4 | Natural language processing | 80 | 80 |
| 5 | Trend analysis | 0 | 0 |

6) What kind of problems is attended generally?

**Kind of problems attended generally**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Kind of problems attended** | **No. of Respondents** | **Percentage (%)** |
| 1 | Existing problems | 84 | 84 |
| 2 | New problem | 16 | 16 |

7) Where do you get most of the ideas for new products?

**Idea generation source**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Idea generation source** | **No. of Respondents** | **Percentage (%)** |
| 1 | From employees | 3 | 3 |
| 2 | Client/Customer | 17 | 17 |
| 3 | Market study reports/external agencies | 80 | 80 |

8) Rank your preference for the idea generation methods given above

**Preference for the idea generation methods**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Idea generation source** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | Idea from employees | 0 | 3 | 85 | 91 | 15 |
| 2 | Client | 9 | 76 | 15 | 194 | 33 |
| 3 | Market study reports/external agencies | 91 | 21 | 0 | 315 | 52 |

9) Employee’s participation in idea generation is advisable or not?

**Employee’s participation in idea generation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Employee’s participation in idea generation** | **No. of Respondents** | **Percentage (%)** |
| 1 | Always advisable | 65 | 65 |
| 2 | Usually advisable | 25 | 25 |
| 3 | Sometimes advisable | 10 | 10 |
| 4 | Rarely advisable | 0 | 0 |
| 5 | Never advisable | 0 | 0 |

10) How do you rate the idea generation process in you company?

**Rating the idea generation process**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Rating the idea generation process** | **No. of Respondents** | **Percentage (%)** |
| 1 | Very high quality | 68 | 68 |
| 2 | High quality | 23 | 23 |
| 3 | Neither high nor low quality | 9 | 9 |
| 4 | Low quality | 0 | 0 |
| 5 | Very low quality | 0 | 0 |

11) How are teams assigned for the feasibility study

**Team assignment for the feasibility study**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Team assignment for the feasibility study** | **No. of Respondents** | **Percentage (%)** |
| 1 | Senior level management team | 83 | 83 |
| 2 | Pre designated team for all feasibility study | 17 | 17 |
| 3 | Random selection of members from each departments | 0 | 0 |

12) Rank your preference for the methods of assigning teams for feasibility study

**Preference for assigning teams for feasibility study**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Preference for assigning teams for feasibility study** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | Random selection of members from each departments | 0 | 0 | 100 | 100 | 16.7 |
| 2 | Pre designated team for all feasibility study | 21 | 79 | 0 | 221 | 36.8 |
| 3 | Senior level management team | 79 | 21 | 0 | 279 | 46.5 |

13) Who leads the team for studying the feasibility of selected ideas

**Leadership of team for studying the feasibility of selected ideas**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Team assignment for the feasibility study** | **No. of Respondents** | **Percentage (%)** |
| 1 | Member from marketing | 2 | 2 |
| 2 | Member from technical | 98 | 98 |
| 3 | Member from finance | 0 | 0 |
| 4 | Member from HR | 0 | 0 |

14) How the idea selection process works in the company?

**Idea selection process in the company**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Idea selection process** | **No. of Respondents** | **Percentage (%)** |
| 1 | By voting majority | 9 | 9 |
| 2 | Consensus after discussion | 91 | 91 |
| 3 | Analytical | 0 | 0 |

15) Rank your preference for the idea selection process

**Preference for Idea Selection Process**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Preference for Idea Selection Process** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | By voting majority | 8 | 67 | 25 | 183 | 31 |
| 2 | Consensus after discussion | 81 | 15 | 4 | 277 | 47 |
| 3 | Analytical | 8 | 17 | 75 | 133 | 22 |

16) How do you evaluate the feasibility of an idea? Rank the influencing factors.

**Rank the influencing factors to evaluate the feasibility of an idea**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Preference for Idea Selection Process** | **Ranks** | | | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** | **Rank 4** | **Rank 5** |
| 1 | Market acceptance | 72 | 13 | 13 | 2 | 0 | 442 | 30 |
| 2 | Cost of production | 4 | 7 | 18 | 67 | 4 | 240 | 17 |
| 3 | Technology | 24 | 75 | 1 | 0 | 0 | 423 | 28 |
| 4 | Competitors | 0 | 4 | 61 | 24 | 11 | 258 | 17 |
| 5 | Profit | 0 | 1 | 7 | 7 | 85 | 124 | 8 |

17) What are the means of finding the approximate time and cost estimate for a product

**Estimate the approximate time and cost for a product**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Estimate the approximate time and cost for a product** | **No. of Respondents** | **Percentage (%)** |
| 1 | Experience from similar projects  carried out by us | 79 | 79 |
| 2 | Competitors cost/quote | 5 | 5 |
| 3 | Own estimate | 16 | 16 |

18) How teams do the detailed study on each selected ideas?

**Methods for the detailed study on the selected ideas**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Methods for the detailed study on the selected ideas** | **No. of Respondents** | **Percentage (%)** |
| 1 | Assigning different teams with different objectives | 85 | 85 |
| 2 | Studying reports of similar products within the company | 15 | 15 |
| 3 | Competitors reports | 0 | 0 |

19) Rank your preference for the process of detailed study of selected idea

**Preference for the process of detailed study of selected idea**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Preference for the process of detailed study of selected idea** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | Assigning different teams with different objectives | 85 | 12 | 3 | 282 | 47 |
| 2 | Studying reports of similar products within the company | 13 | 79 | 8 | 205 | 35 |
| 3 | Competitors reports | 0 | 10 | 90 | 110 | 18 |

20) Who leads the team for detailed study of selected idea

**Team leader for studying the details of selected ideas**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Team leader for studying the details of selected ideas** | **No. of Respondents** | **Percentage (%)** |
| 1 | Member from marketing | 2 | 2 |
| 2 | Member from technical | 98 | 98 |
| 3 | Member from finance | 0 | 0 |
| 4 | Member from HR | 0 | 0 |

21) What are the important fields covered in the detailed study of a product, Rank them in preference

**Preference for the important fields covered in the detailed study of a product**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Important fields covered in the detailed study of a product** |  | **Ranks** | | | **Points** | **Percentage**  **(%)** |
| **Rank 1** | **Rank 2** | **Rank 3** | **Rank 4** |
| 1 | Marketing | 20 | 67 | 13 | 0 | 307 | 31 |
| 2 | Technical | 81 | 15 | 4 | 0 | 377 | 38 |
| 3 | Finance | 2 | 16 | 78 | 4 | 216 | 21 |
| 4 | HR | 0 | 0 | 5 | 95 | 105 | 10 |

22) How do you rate the process for the detailed study of an idea in your company?

**Rate the process for the detailed study of an idea in the company**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Rate the process for the detailed study of an idea in the company** | **No. of Respondents** | **Percentage (%)** |
| 1 | Very high quality | 2 | 2 |
| 2 | High quality | 23 | 23 |
| 3 | Neither high nor low quality | 73 | 73 |
| 4 | Low quality | 2 | 2 |
| 5 | Very low quality | 0 | 0 |

Source: Primary data

23) How are teams assigned for product development in the company?

**Teams assigned for product development in the company**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Teams assigned for product development in the company** | **No. of Respondents** | **Percentage (%)** |
| 1 | New team with sufficient expertise in each functionality | 87 | 87 |
| 2 | Reassigning work to a team had  similar project | 9 | 9 |
| 3 | Inviting application from employees | 4 | 4 |

24) Rank your preference for the assignment of teams for product development

**Rank the preference for the assignment of teams for product development**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Preferences** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | New team with sufficient expertise in each functionality | 2 | 71 | 26 | 174 | 29 |
| 2 | Reassigning work to a team had similar project | 86 | 10 | 3 | 281 | 47 |
| 3 | Inviting application from employees | 12 | 19 | 71 | 145 | 24 |

25) How many times in the last six months a prototype model have faced serious issues which then required serious rework from beginning

**Serious issues in the last 6 months**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Issues** | **No. of Response** | **Percentage (%)** |
| 1 | Once | 5 | 5 |
| 2 | Twice | 10 | 10 |
| 3 | Thrice | 12 | 12 |
| 4 | More than thrice | 73 | 73 |

26) What all kinds of code review methods are there in your company?

**Code review methods**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Support statements** | **No. of Response** | **Percentage (%)** |
| 1 | Self | 16 | 12 |
| 2 | Peer | 13 | 10 |
| 3 | Lead | 97 | 78 |
| 4 | Architect | 0 | 0 |

27) In your opinion, whether the workforce in the company are capable of handling works in any new technology or domain.

**Capability of workforce in working in new technology**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Support statements** | **No. of Respondents** | **Percentage (%)** |
| 1 | Definitely would | 15 | 15 |
| 2 | Probably would | 85 | 85 |
| 3 | Probably would not | 0 | 0 |
| 4 | Definitely would not | 0 | 0 |

28) What are the positives of prototype development process in your company?

**Positives of prototype development process**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Methods** | **No. of Respondents** | **Percentage (%)** |
| 1 | Approach for development | 80 | 31 |
| 2 | The way in which selecting members for the development team | 94 | 35 |
| 3 | Availability of subject matter experts | 88 | 34 |

29) Rank the positives of prototype development process in your company

**Rank the positives of prototype development**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Areas** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | Approach for development | 64 | 14 | 20 | 240 | 40 |
| 2 | The way in which selecting members for the development team | 10 | 79 | 10 | 198 | 33 |
| 3 | Availability of subject matter experts | 26 | 7 | 70 | 162 | 27 |

30) Rank the areas that need improvements for the prototype development

**Rank the areas need improvement for the prototype development**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Areas** | **Ranks** | | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** | **Rank 4** |
| 1 | Approach for development | 21 | 16 | 7 | 56 | 202 | 20 |
| 2 | The way in which selecting members for the development team | 9 | 23 | 66 | 2 | 239 | 24 |
| 3 | Availability of subject matter experts | 13 | 60 | 27 | 0 | 286 | 29 |
| 4 | Others | 57 | 1 | 0 | 42 | 273 | 27 |

31) How are unit testing done in your company?

**Assigning the task of unit testing**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Method** | **No. of Respondents** | **Percentage (%)** |
| 1 | Developer along with the development | 90 | 90 |
| 2 | Assigning to a separate team member | 10 | 10 |

32) Who explains the requirements and functionalities of the product to testing team

**Process of requirement gathering for testers**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Support statement** | **No. of Respondents** | **Percentage (%)** |
| 1 | Developer | 31 | 31 |
| 2 | Self-learning from design and requirement documents | 10 | 10 |
| 3 | Business Analysts and Developers | 59 | 59 |

33) Do you think if testing is done by other company, will it be more effective?

**Effectiveness of assigning testing to external companies**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Support statement** | **No. of Respondents** | **Percentage (%)** |
| 1 | Strongly Agree | 8 | 8 |
| 2 | Somewhat Agree | 80 | 80 |
| 3 | Neither Agree nor disagree | 12 | 12 |
| 4 | Somewhat disagree | 0 | 0 |
| 5 | Strongly Disagree | 0 | 0 |

34) What are the positives of overall testing process in your company?

**Positives of overall testing process in your company**

|  |  |  |  |
| --- | --- | --- | --- |
| **Si. No.** | **Areas** | **No. of Respondents** | **Percentage (%)** |
| 1 | Enough allocation of time for testing | 86 | 86 |
| 2 | Detailed review for Unit testing, SIT and UAT results | 22 | 22 |
| 3 | Testing is done by other company | 0 | 0 |
| 4 | Very active user base to check detailed user acceptance | 3 | 3 |

35)Rank the areas those need improvement for overall testing process in your company

**Rank the areas those need improvements for the overall testing process**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Si. No.** | **Areas** | **Ranks** | | | **Points** | **Percentage** |
| **Rank 1** | **Rank 2** | **Rank 3** |
| 1 | Enough allocation of time for testing | 13 | 2 | 85 | 128 | 21 |
| 2 | Testing is done by other company | 14 | 74 | 10 | 200 | 33 |
| 3 | Very active user base to check detailed user acceptance | 73 | 24 | 5 | 272 | 46 |