The customer approached our team with the task of developing, testing and implementing a B2C portal for a company engaged in the sales and service of electric vehicles under the brand name Skybot. To compile the initial test documentation (test plan), it is necessary to think and make a list of artifacts that are necessary for successful testing of the product (web portal).

**Test object: Input technical requirements**

**Input technical requirements**

**The customer contacted us with the following general requirements:**

**1. The portal must have fast, stable and secure web hosting that can work with enough visitors - 13**

**2. The mobile version of the portal, which can work fast on mobile devices - 8**

**3. Convenient and understandable design and the possibility of updating it - 5**

**4. Stable operation of the portal frontend - 8**

**5. Reliable operation of the portal backend - 13**

**6. Quick process of placing an order - 5**

**7. User safety and secure payments -13**

**8. Information about each model of electric transport with a detailed description -3**

**9. The possibility of registering for a test drive from the portal - 5**

**10. The possibility of registration in the service center of those users who have already purchased the product (model) - 3**

**11. Reviews about the product - 3**

**12. Individual product recommendations - 3**

**13. Integration of the portal with video hosting for viewing video reviews of products (models) - 3**

**14. The portal must have the technical ability to implement analytics tools - 8**

**Detailed requirements from the customer:**

**1. The portal should have fast, stable and secure web hosting that can work with enough visitors (requirement priority: very high level of requirement - 5 points)**

Portal Up-Time 90% *(0).*

**If your online project, business, or eCommerce store doesn’t deliver online reliability, it leads to the following consequences:**

* **Lost revenue.** [Pingdom](https://www.pingdom.com/outages/average-cost-of-downtime-per-industry/) reports that short downtime costs **$137-427/minute** for small businesses and over **$16,000/minute** for large companies. Downtime also hurts customer trust and loyalty, robbing you of more potential revenue.
* **Negative SEO impact.** Frequent downtime will cause search engines to crawl the site less often, reducing its visibility. It may also cause a high bounce rate, hurting your SEO efforts.
* **Potential data loss or security breaches.** Hardware failure or software issues can risk data corruption or loss without proper backups. Downtime also signals system vulnerability, increasing the risk of being hacked.
* **Interrupted security protocols.** Downtime can interrupt regular updates and security checks, leaving the site vulnerable until it’s back online and updated.
* **Reduced productivity.** Fixing a crashed website takes one to three hours, costing your team valuable time to complete other tasks. Website crashes can occur due to code errors, plugin issues, or spikes in web traffic (c)

**That's why nowadays industry standard is 99.999% uptime, but for cut cost, we would consider a provider with uptime of 99.5%**

* + Portal hosting should be geographically divided in the ratio of 80% - Ukrainian hosting, 20% - foreign hosting (0).

**Since a war in Ukraine, 80% of hosting in the country is not a safe solution for business**

* + 24/7 support team availability *(1).*

2. A mobile version of the portal or a mobile application that can work quickly on mobile devices (requirement priority: high level of requirement - 3 points).

* + the portal should work on tablets, smartphones, smart watches *(0)*

**Smart watches need to be removed from this list because the portal will not be able to work on them**

* + the portal must work with the Safari web browser *(1).*
  + the portal should open quickly via mobile internet on mobile devices *(1).*

**What does "fast" mean?**

Google recommends a page load speed of two seconds for an ecommerce site. But in general, the faster, the better. The average conversion rate for an ecommerce store decreases by 0.3% for every additional second it takes for your website to load. “Humans are impatient,” says Josh Stutt, marketing lead at a digital innovation agency. “We can all think of times when we’ve tried to visit a site, it hasn’t loaded quickly, and then we simply closed the tab.”

If you’re operating a store with an average order value of $60 and 5,000 visitors each day, for example, a one-second delay in site speed could be costing you $9,000 a day (c)

3. Convenient and clear design and the possibility of updating it (requirement priority: requirement level - 2 points).

* + the design should be minimalistic, but functional and understandable for the user *(1).*
  + the design should be adapted for all modern browsers *(1).*

4. Stable operation of the front end of the portal (requirement priority: very high level of requirement - 4 points).

* + the ability to quickly add elements (updating portal elements) *(1).*
  + the ability to quickly update content during peak hours of visits *(1).*
  + the ability to work with video formats *(1).*

**We propose to integrate YouTube on portal, which would save us from supporting different formats**

* + possibility of adding any photo formats for description *(0)*

**There are a lot of photo formats, and it can be expensive to support all of them. We propose to limit them to standard formats taken as an example from Amazon - JPEG, BMP, PNG, GIF**

5. Reliable work of the backend of the portal (requirement priority: high level of requirement - 5 points).

* + uptime порталу 96,5% *(0).*

**See paragraph 1**

* + system updates are possible at any time *(0).*

**System updates should be limited to non-peak hours to minimize problems that may arise with customers during the update**

* + the user data base should be 1-Tier level *(0)*

**1-Tier Architecture isn't safe so for e-Commerce we must use 3-Tier Architecture.**

**Advantages of 3-Tier Architecture**

* **Enhanced scalability:** Scalability is enhanced due to the distributed deployment of application servers. Now, individual connections need not be made between the client and server.
* **Data Integrity:** 3-Tier Architecture maintains Data Integrity. Since there is a middle layer between the client and the server, data corruption can be avoided/removed.
* **Security:**3-Tier Architecture Improves Security. This type of model prevents direct interaction of the client with the server thereby reducing access to unauthorized data (c)
  + SQL database backup should be performed once a month *(0).*

**How often you backup your e-commerce data depends on how often you update it, how much traffic you get, and how critical it is for your business. You should backup your data at least once a day, or more frequently if you have a lot of changes or transactions**

* + database administration should be performed by the tester *(0)*

**This isn't a tester job but a database administrator, or DBA, who is responsible for maintaining, securing, and operating databases and ensures that data is correctly stored and retrieved. In addition, DBAs often work with developers to design and implement new features and troubleshoot any issues**

6. Fast process of placing an order (requirement priority: high level of requirement - 3 points).

* + order fulfillment by phone number in the form of a quick form *(0).*

**To support this function, we would need to make a form where the buyer would enter his data to place an order. If the buyer was previously registered his data would be pulled up by phone number**

* + the common order form through registration by phone number and email *(1).*
  + feedback form about registration using Telegram *(0).*

**Not all people have Telegram, and the use of third-party programs makes it difficult to support and process feedback**

7. User safety and secure payments (requirement priority: very high requirement level - 4 points).

* + information about bank cards attached to the account should be stored in the database of the online store *(0).*

**To store payment cards data, you must meet the requirements - Payment Card Industry Data Security Standard (PCI DSS). The easiest way is to integrate with a company that specializes in storing this information**

* + to optimize finances, the main page of the portal can have an https format *(1).*
  + internal pages of the portal can be in http format to save money and resources (*0).*

**All pages must be in HTTPS format, otherwise information may be intercepted**

* + integration with Apple Pay and Google Pay payment systems *(1).*

8. Information about each model of electric transport with a detailed description (requirement priority: high level of requirement - 3 points)

* + portal should contain information about each model with a detailed technical description *(1).*
  + users have the option (feedback form) if the technical specifications are incorrect *(1).*
  + users can edit the specifications themselves if they are not correct *(0).*

**We cannot provide access to the site to everyone. Editing of the technical information of the product will be carried out by special personnel based on the feedback received in the "feedback form".**

9. Possibility to sign up for a test drive from the portal (requirement priority: average requirement level - 3 points).

* + the form for registering for a test drive should be able to enter data about the driver's license *(1).*
  + the registration form allows users under the age of 13 to register for a test drive using a passport *(0)*

**Persons under the 16 years of age are prohibited from driving.**

* + the test drive registration form allows anyone to register using a phone number *(0).*

**To register for a test drive, customer must confirm that they are over 16 years and has the permission (driver license for example) to drive a vehicle.**

10. The possibility of registering in the service center of those users who have already purchased the product (model) (priority of the request: average level of the request - 3 points)

* + registration form in the service center of buyers who need product warranty support *(1).*
  + the possibility of a quick registration form for a non-warranty (paid repair) service using a phone number *(1).*

**See paragraph 6.1**

* + registration form for non-warranty service for users who purchased a product (supported model) from another supplier *(1).*

11. Product reviews (priority of requirement: high level of requirement - 5 points)

* + the product feedback can be provided by any unregistered user *(0).*
  + feedback can be provided by any registered user *(0).*
  + the rating of the product (model) is automatically based on the reviews of registered and unregistered users *(0)*

**Only the registered customer who purchased the item can leave a review for this particular item. And every customer can ask a question about any item.**

* + the product rating can be set with stars in the number from 1 to 5 *(1).*
  + the product rating is formed by the sum of reviews and the number of stars under the reviews *(0)*

**The rating would form only by the number of ratings. The buyer cannot leave a review without rating the product.**

12. Individual product recommendations (requirement priority: average requirement level - 4 points).

* + users who have already purchased a product - receive an informational newsletter with recommendations to the registered number in case of any promotion *(1).*
  + users who registered the purchased product on the site receive a reminder about the end of warranty support *(1).*
  + users who have registered but have not yet purchased a product - receive a message about the reviewed product *(1).*
  + users who have registered and put the product in the basket - receive a reminder to pay for this product *(1).*

13. Integration of the portal with video hosting for viewing video reviews of products (models) (1).

* + the portal should be integrated with video hosting *(0).*

**Integrated with which video hosting site?**

* + the video hosting channel where the reviews are posted has public access for editing and adding videos *(0).*

**All video reviews must be pre-moderated to avoid publishing videos with prohibited content**

* + every user who purchased a product (certain model) can leave a video about unpacking or a test on the video hosting channel *(1).*

14. The portal should have the technical ability to implement analytics tools (requirement priority: average requirement level - 3 points).

* + it's necessary to ensure the integration of the portal to work with SEO tools *(1).*

**What tools exactly does the customer want to work with? Can we integrate the portal with these tools?**

* + portal analytics and statistics should be done with a team of testers *(0).*

**Analysts should do analytics, and testers should do testing**

* + An SEO specialist can get developer support to solve issues with the integration of their own statistics collection tools *(1).*