

Electronic State Procurement

project concept by Redwerk

SUMMARY

Due to corruption deals in the public procurement industry in Ukraine, from 10% to 15% (\$ 7.4 billion grivnas) of budget funds are deposited in the pockets of officials. How can information technology affect the reduction of corruption in Ukraine? Redwerk offered its own solution.

INTRODUCTION

The problem of corruption in public procurement exists in almost every country. And, unfortunately, Ukraine is no exception. But, thanks to the introduction of modern information technologies into this field, the solution is in conducting the tenders through the online web platforms. Such experience has already been received by Georgia with its Ge-GP system, Korea with the KONEPS project and Ukraine with its system for holding tenders in public and state procurement called ProZorro and launched in 2015. This project helps bring transparency to the tenders and takes it to a whole new level thereby reducing the number of corruption accidents in the country. It also received an international public procurement award, Public Sector Procurement, for the creation and implementation of an electronic system with unique architecture.

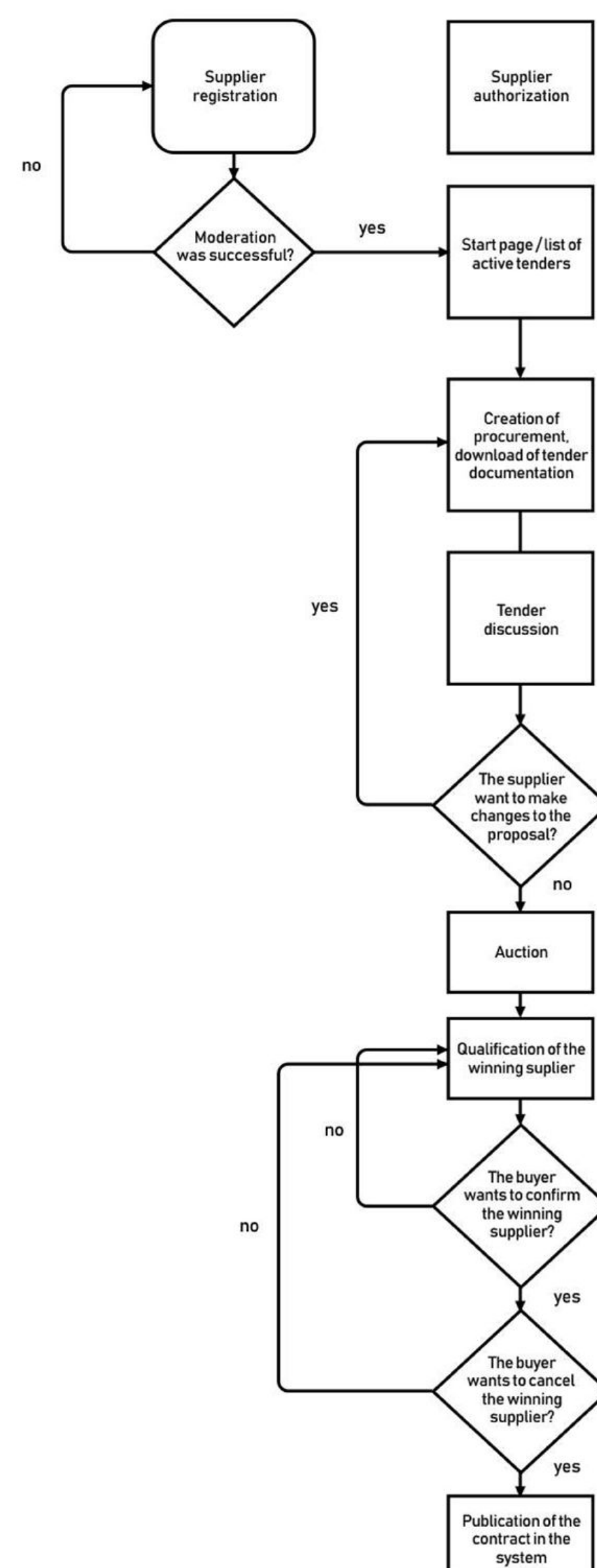
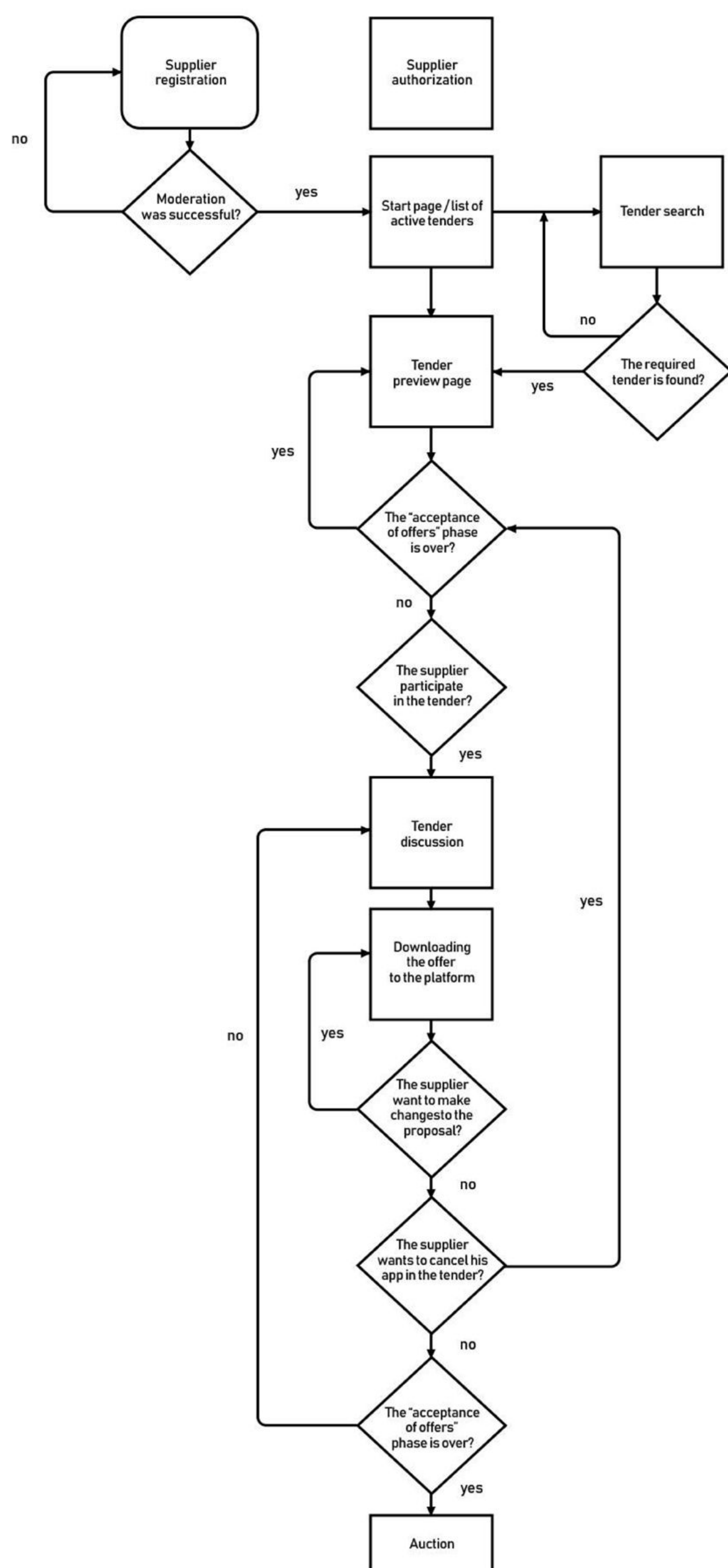
ELECTRONIC STATE PROCUREMENT TENDER PLATFORM PROJECT CONCEPT

The concept of the project tender platform for electronic public procurement, that was created in support of Ukrainian anti-corruption reforms, is an excellent example of our attempt to define and describe the requirements for the project functionality, as well as to provide full estimate.

Tasks and Scope Of the Prct

The system is an online platform for organizing, holding and participating in public electronic tenders based on the Prozorro system. The Prozorro system is a central database (CDB) through which all platforms integrated with Prozorro transmit the information. After the tender was announced by the state company on any website, information about it is transmitted to the Prozorro CBD and duplicated throughout all sites, so that all potential suppliers registered at any platform have equal access to the announced tender.

There are two main roles in the system: the supplier and the buyer. Business processes for both roles are displayed in simplified flowcharts, below.



The concept of this project focuses on creating the most convenient and attractive system for the supplier, with the ability to search, view and monitor tenders, as well as the ability to analyze various information that is available to the system, which will allow the supplier to effectively manage the sales. The platform also allows state companies to announce tenders and communicate with suppliers.

Below is a breakdown of the project into tasks and subtasks with an estimate of the implementation time for each of them.

REDWERK	Electronic State Purchasing Platform		
	hours		
Tasks	Optimistic	Realistic	Pessimistic
Initial analysis	48	56	64
General			
Project core	18	22	26
Implementation of the document module	18	26	38
Integration with Prozorro.org API	22	26	34
Implementation with synchronization module	12	20	32
Statistics module			
Implementation of the statistics collection module	12	16	20
Implementation of the analysis module	22	34	42
Implementation of the recommendation module	12	20	28
Payment module			
Integration with payment systems	26	34	42
Implementation of a payment history	18	26	34
Administrative panel			
Implementation of the list of users and CRUD activities for users	8	16	20
Implementation of the list of tenders and CRUD actions for tenders	8	16	20
Notification module			
Implementation of email notifications	6	8	16
Implementation of SMS notifications	12	16	24
Implementation of notification settings	8	16	20
UI			
Implementation of registration/authorization	12	16	24
Implementation of the account of the supplier	26	34	42
Implementation of the settings module	8	12	16
Implementation of the search module and filters	16	24	32
Implementation of the Policy and User Rights Management module	8	12	20
Implementation of the module of favorites	12	16	20
Tenders module			
Implementation of the creation/updating of the tender	16	20	28
Implementation of the discussion module	22	26	30
Implementation of the auction module	8	12	20
Implementation of tender results	16	24	32
UI/UX results	48	68	100
Testing	98	138	198
Total	540	754	1022

Technical Side

For the project realization, we chose the next technology stack: Python, Django, JQuery, Bootstrap, Backbone, (NodeJS, Redis if necessary). Testing will take place in three browsers: Internet Explorer, Google Chrome and Firefox (latest version).

For the first version of the platform the following is not provided:

- Adaptive web design;
- Development of the native iOS and Android applications;
- Collection and analysis of statistics on tenders, organized by buyers;
- User Rights Management Policy for the Buyer;
- Configuration of notifications for the buyer.

However, if necessary, the platform can be supplemented with this functionality (for example, after the successful launching of the project).

FUNCTIONALITY FOR THE SUPPLIER

Supplier Registration

When registering, the supplier fills in the required fields (full name of the contact person, the name of the organization, USREOU code, TIN code, type of activity according to CQED, etc.) and the optional fields (categories of delivered goods, corporate website, etc.).

If during registration, the user indicated a unique (not yet registered in the system) EDRPOU code, the system identifies him as the primary user of the company with the appropriate rights. If during registration the user indicated not a unique EDRPOU code (already registered in the system), the system denies registration and invites the user to submit an application from the main user of the company.

After registration, the vendor's request is sent to the platform administrators for moderation. Before the application is approved by the administrators, the vendor can use the platform only in the test mode.

Home Page

The home page of the authorized user displays the list of tenders in which the supplier is currently participating, with the following statuses: "auction", "acceptance of offers", "clarifications", "procurement announced", "qualification". The user can also filter tenders according to the required criteria, at this moment the system remembers these filters and applies them when the start page is displayed.

Each line with the tender contains the following columns: "Tender name", "Customer organization name", "Procurement budget", "Status", "Time to transition to the next status" (in the form of a countdown). Tenders can be grouped by any of the available fields (for example, in ascending/descending order of the procurement budget, by time, by status).

PUBLIC PROCUREMENT ACCESSIBLE NOW

Transparent pre-threshold procurements are open to all suppliers on common terms

SEARCH TENDER BY NUMBER

Advanced search

FIND TENDER

YOUR TENDERS

TENDER NAME	ORGANIZER	PROCUREMENT BUDGET	STATUS	NEXT STATUS IN	
Signal lights panel	NPC Ukrenergo	42 150.00 UAH	Procurement announced	1 day 2 hours	★
Instruments and measuring devices, control and testing devices, and others (stand for adjusting the headlights of the vehicle)	Ukrainian State Radio Frequency Center	32 000.00 UAH	Clarifications	3 days 16 hours	★
Plastic containers	Main and cross border power grids of SE NPC Ukrenergo	7 500.00 UAH	Clarifications	7 minutes 32 seconds	★
Milk and cream	USEP "Ukrposhta"	12 000.00 UAH	Accepting applications	2 hours 15 minutes	★
Fruits and vegetables, processed and canned, except for potatoes	VP "Atomenergomash" SE "NNEGC "Energoatom"	15 000.00 UAH	Auction	2 hours 15 minutes	★
Stationery and paper products (paper)	ВП "Атоменергомаш" ДП "НАЕК "Енергоатом"	105 640.00 UAH	Auction	9 days 21 hours	★
Canned vegetable snack foods	Ministry of Defense of Ukraine	180 708.00 UAH	Auction	7 hours 44 minutes	★
Procurement of consumables for conducting technical maintenance of computer and peripheral equipment	NPC Ukrenergo	27 720.00 UAH	Qualification	3 days 23 hours	👁

Search of tenders

The user can search for a tender by procurement number, or use one or more fields from advanced search:

- Status;
- Procurement amount;
- Name of procurement;
- Description of procurement (keywords);
- Name of the customer;
- Start time and end time of the acceptance of offers;
- CPV classifier code;
- DCT classifier code

The search results are displayed similar to like the one at Home page; the system allows to add a tender to your favorites, which will enable you to further customize notifications for it and display it on the start page without participating in this tender.

SEARCH ALL TENDERS

ADVANCED SEARCH

[Search tender by number](#)

FIND TENDER

TENDER STATUS:

CLARIFICATIONS

PROCUREMENT AMOUNT

FROM: 5 000.00 UAH TO: 40 000.00 UAH

PROCUREMENT NAME:

PROCURER NAME:

PROCUREMENT DESCRIPTION:

START OF THE APPLICATION PROCESS:

JULY 17, 2015

END OF APPLICATION PROCESS:

JULY 31, 2015

KCPV CLASSIFIER CODE:

SCGS CLASSIFIER CODE:

SEARCH RESULTS:

TENDER NAME	ORGANIZER	PROCUREMENT BUDGET	STATUS	NEXT STATUS IN	
Instruments and measuring devices, control and testing devices, and others (stand for adjusting the headlights of the vehicle)	ДUkrainian State Radio Frequency Center	32 000.00 UAH	Clarifications	3 days 16 hours	★
Plastic containers	Main and cross border power grids of SE NPC Ukrenergo	7 500.00 UAH	Clarifications	7 minutes 32 seconds	★

Tender Preview Page

Upon transition to the page of the tender preview, the following information will be displayed:

- The schedule of the tender;
- Name of the company-purchaser;
- Information about the company-purchaser;
- Information on procurement;
- List of lots;
- Classifiers;
- Documentation. The system provides an opportunity to download documents and view them directly in the browser, as well as view in the browser documents embedded in the archive. The system also displays the date and time of loading of each document. Documents that were deleted by the tender organizer remain in the system with the mark "document deleted".

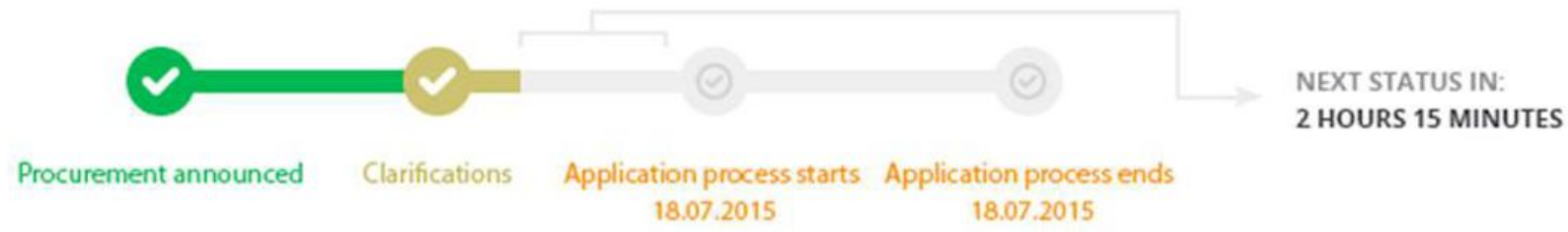
On this page, the supplier can also subscribe to the tender updates (add it to the favorites), take part in the tender and go to the "Tender Discussion" section.

FRUITS AND VEGETABLES, PROCESSED AND CANNED



[CLARIFICATIONS](#)
PROCUREMENT BUDGET: 15 000.00 UAH
[SUBSCRIBE TO TENDER](#)

TENDER SCHEDULE:



TENDER ORGANIZER:

USEP "UKRPOSHTA"

[PARTICIPATE](#)

[TENDER DISCUSSION](#)

ABOUT COMPANY:

USEP "Ukrposhta" is the responsibility of the Ministry of Infrastructure of Ukraine, and is the national postal operator of Ukraine in accordance with the decree of the Cabinet of Ministers of Ukraine dated January 10, 2002.

PROCUREMENT INFORMATION:

Need about 100 kilograms of any fruits and vegetables, except for potatoes. Fresh, nice looking. Will be used for the nearest banquet.

LIST OF LOTS:

Fruits and vegetables




CPV CLASSIFIER:

15411100-3

SCGS CLASSIFIER:

10.41.5

DOCUMENTS

 <p>Technical requirements Microsoft Word, 351 kb [14.07.2015 14:27:20]</p> <p>SAVE</p> <p>OPEN</p>	 <p>Procurement volume Adobe PDF, 1.2 Mb [15.07.2015 17:00:36]</p> <p>SAVE</p> <p>OPEN</p>	 <p>Technical requirements ZIP archive, 925 kb [13.07.2015 14:27:20]</p> <p>SAVE</p> <p>OPEN</p>
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Tender Discussion

In the "Tender Discussion" section, the supplier can put a question to the tender organizer, get an answer to it and view the questions/answers of the other suppliers (the real names of the companies-participants are not displayed in the system).

Tender Submission

By clicking on the button "Participate in the tender", the Price entry field (the supplier enters the price of its offer in this field) and File Download window become active. Files can be downloaded using the drag-and-drop function and viewed directly in the browser.

The proposal can be edited by the supplier before the end of the "acceptance of proposals" phase.

Cancel Offer

The supplier can cancel his participation in the tender at any time before the end of the "acceptance of proposals" phase.

Auction

At the end of the "acceptance of proposals" phase, the purchaser designates the date of the auction, which is displayed on the tender preview page. The link to the auction page becomes available some time before the auction starts and is also displayed on the tender preview page.

Supplier's Account

The supplier can change data about his company, replenish his bill, set up user rights (see User Rights Management Policy), set up notifications (see Notification settings), and view the following information in his account:

- Analytics section: graph of sales volume by time;
 - graph of sales volume by time;
 - sales diagram by customers, reflecting the share of sales coming to each client of the supplier;
 - analysis of won/lost tenders: comparison of the price of the supplier and competitors by the selected tender in the form of a diagram;
 - customer analysis: the number of submitted tenders, the number of won/lost tenders, the total amount of transactions by any of the supplier's customers;
- Recommendations section: recommendations to participate in new tenders based on tenders, in which the supplier participated earlier, and keywords (tags). Keywords can also be set by the supplier in his account.
- Tenders calendar: displays all tenders in which participates and for which the supplier is subscribed, indicating their current status.

E PROCUREMENT PLATFORM
Electronic public procurement platform
SUPPLIER
PROCURER
NO NEW NOTIFICATIONS
YOUR ACCOUNT

YOUR ACCOUNT
EDIT PROFILE

Supplier REDWERK
 MY ACCOUNT: 3000.00 UAH
REFILL
USER ACCESS MANAGEMENT POLICY
NOTIFICATION SETTINGS

ANALYTICS



RECOMMENDED TENDERS:

TENDER NAME	ORGANIZER	PROCUREMENT BUDGET	STATUS	NEXT STATUS IN
Instruments and measuring devices, control and testing devices, and others (stand for adjusting the headlights of the vehicle)	Ukrainian State Radio Frequency Center	32 000.00 UAH	Clarifications	3 days 16 hours
Plastic containers	Main and cross border power grids of SE NPC Ukrenergo	7 500.00 UAH	Clarifications	7 minutes 32 seconds

CALENDAR:

FILTER BY DATE: 01.07.2015 - 31.07.2015

29	30	July 1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16 Plastic containers Milk and cream	17 Signal lights panel	18	19
20 Instruments and measuring devices, control and testing...	21 Procurement of consumables for conducting technical maintenance of computer and peripheral equipment	22	23	24	25 Stationery and paper products (paper)	26
27	28	29	30	31	aug 1	2

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 SUPPLIER |
 PROCURER |
 NO NEW NOTIFICATIONS |
 YOUR ACCOUNT

YOUR ACCOUNT | [EDIT PROFILE](#)

Supplier REDWERK |
 MY ACCOUNT: 3000.00 UAH |
 [REFILL](#) |
 [USER ACCESS MANAGEMENT POLICY](#) |
 [NOTIFICATION SETTINGS](#)

ANALYTICS

[SALES VOLUME](#) |
 [SALES BY CUSTOMERS](#) |
 [WON / LOST TENDERS](#) |
 [CUSTOMER ANALYSIS](#) |
 [EXPORT TO EXCEL](#)

FILTER BY DATE:
 -



- "Ukrenergo" (43.5 thousand UAH)
- "Pridniprovska zaliznytsya" (42.2 thousand UAH)
- "Ukrposhta Sumy directorate" (24 thousand UAH)
- "Ukrposhta Sumy directory"
- Ministry of Defense of Ukraine (13 thousand UAH)

RECOMMENDED TENDERS:

TENDER NAME	ORGANIZER	PROCUREMENT BUDGET	STATUS	NEXT STATUS IN	
Instruments and measuring devices, control and testing devices, and others (stand for adjusting the headlights of the vehicle)	ДUkrainian State Radio Frequency Center	32 000.00 UAH	Clarifications	3 days 16 hours	★
Plastic containers	Main and cross border power grids of SE NPC Ukrenergo	7 500.00 UAH	Clarifications	7 minutes 32 seconds	★

CALENDAR:

JULY 2015 |
 FILTER BY DATE:
 -

29	30	July 1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16 Plastic containers Milk and cream	17 Signal lights panel	18	19
20 Instruments and measuring devices, control and testing...	21 Procurement of consumables for conducting technical maintenance of computer and peripheral equipment	22	23	24	25 Stationery and paper products (paper)	26
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User Rights Management Policy

If during registration, the user indicated a unique (not yet registered in the system) EDRPOU code, the system identifies the user as the primary user of the company with the appropriate rights. If during registration, the user indicated not a unique EDRPOU code (already registered in the system), the system denies registration and invites the user to submit an application from the main user of the company.

The main user has administrator rights and can perform all actions provided by the platform, namely:

- Search and browse the tender;
- Add tenders to favorites;
- Apply for tenders;
- Download the tender documentation and indicate the offer price on the site;
- Participate in tenders discussions;
- Participate in the auction;
- View all available statistics in the supplier's account.

The main user can accept applications from potential authorized users (who indicate the company's EDPAU code when registering) and provide them the rights to all or some of the above actions, as well as to configure notifications for all users.

Notification settings

The main user can configure notifications for SMS and email for the following cases:

- The emergence of new recommended tenders in the system;
- Change of the tender status in which the supplier participates;
- Change of the tender status, followed by the supplier;
- Changes in the documentation, tender's description, in which the supplier participates;
- Changes in the documentation, tender's description, followed by the supplier;
- New questions/answers on the tender, in which the supplier participates;
- VNew questions/answers on the tender, followed by the supplier.

For each user can be applied their own, unique notification settings.

Functionality for the supplier

Buyer registration

When registering, the buyer fills in required fields (full name of the contact person, the name of the organization, etc.) and optional fields (specialization of the buyer, corporate website, etc.)

After registration, the buyer's request is sent to the platform administrators for moderation. Before the application is approved by the administrators, the buyer can use the platform only in the test mode.

Home Page

The home page of the authorized user displays the list of tenders that the buyer has organized with the following statuses: "auction", "acceptance of offers", "clarifications", "procurement announced", "qualification". The user can also filter tenders according to the required criteria, at this moment the system remembers these filters and applies them when the start page is displayed.

Each line with the tender contains the following columns: "Tender name", "Procurement budget", "Status", "Time before the transition to the next status" (in the form of a countdown). Tenders can be grouped by any of the available fields (for example, in ascending/decreasing order of the procurement budget, by time, by status).

Tender Creation

By clicking on the button "Create a tender", the buyer goes to the tender creation screen. When creating a tender, the buyer must fill in mandatory fields: the name of the procurement, the classifier of the DKPP, the description, the procurement budget, the minimum step of the auction, the period for accepting offers, the number of lots, etc.

The buyer may also attach documents (tender documentation) to the announced tender.

Editing the Tender

Before the beginning of the acceptance period, the buyer can make changes to the announced tender (change data in previously filled-in-fields, upload additional documents, delete previously uploaded documents).

Cancellation of Tender

The buyer can cancel the tender at any time before the publication of the scan copy of the contract in the system. When canceling a tender, the buyer must specify the reason.

Tender Discussion

In the "Tender discussion" section, the purchaser sees the questions from the tender participants (the names of the tender companies are not disclosed) and can provide their answers.

Auction

At the end of the "acceptance period", the supplier must set a date for the auction. The link to the auction page becomes available some time before the auction starts and is displayed on the tender preview page.

Qualification of the winning supplier

At the end of the auction, the system determines the winning supplier that offered the lowest price. Data on the winning supplier and its offer become available to the buyer. The buyer can accept the offer of the winning supplier or reject it by reviewing the supplier's documentation. In case of rejection of the supplier's offer with the lowest price, the system discloses the data of the next supplier, who takes the second lowest place by the price. The procedure is repeated until the buyer accepts the offer of one of the suppliers, or all suppliers are rejected (in this case the tender will be deemed canceled).

Publication of the contract with the winning supplier

After signing the contract between the buyer and the supplier, the buyer can upload a scan-copy of the contract to the system.

The procedure of reconciliation of the user interface layouts

All in all, based on Prozorro, this system can help to discourage the corruption in e-procurement sector and significantly affect the quality and transparency of public and governmental procurements.

In the process of the project implementation, Redwerk developed and provided in electronic format the models of all platform pages. In such a way, for other projects as well, we present to our clients an example of concept and specifications development. Shall the comments and remarks arise they will be taken into account, and, afterwards, the updated versions of the layouts will be sent again to get final approval.

We hope that rich experience and strong professionalism of Redwerk could contribute to the solution of any e-governmental issues, so we are ready for new offers and partnership.

About Redwerk

Redwerk is a full-cycle software development agency with two R&D offices in Ukraine - in Kyiv and Zaporizhia.

We specialize in developing and maintaining custom SaaS solutions as well as establishing and servicing fully managed dedicated software development teams for our customers worldwide.

Since 2005, Redwerk has been assisting startups, midsize businesses, and large enterprises with developing and maintaining custom software solutions in eCommerce, eGovernment, eLearning, Healthcare, Data Mining, Media & Entertainment, and Game Development.

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