

DigMap
DigMap – Digital Map Excerpt Software
FINODEX_048

Business Proposal

COORDINATOR

Contact person	Krunoslav Hrnjak, Founder & CEO
E-mail	krunoslav@yottabyte.hr
Company	yottabyte j.d.o.o.

TEAM MEMBERS

Contact person	Siniša Sovilj, Business Development Manager Tihana Hrnjak, Marketing Manager Krunoslav Hrnjak, Solution Architect
E-mail	sinisa@yottabyte.hr tihana@yottabyte.hr krunoslav@yottabyte.hr

Index

Business Idea	3
Summary of Business Idea.....	3
Full Description of Business Idea	3
Business Canvas Model (BMC) with Numbers	5
Summary	5
BMC Value Proposition	5
BMC FIWARE Generic Enablers	5
BMC Key Activities/Resources	5
BMC Key Partners.....	6
BMC Cost Structure	6
BMC Customer Relationship / Sales Channels	6
BMC Customer Segments	7
BMC Revenue Streams	7
Conclusions Extracted From Interviews with Potential Customers / Users	9
Summary of Conclusions Extracted From Interviews with Potential Customers / Users.....	9
Full Description of Interviews	9
Lessons Learned Thanks to FINODEX	12
Appendix: Business Model Canvas Spreadsheet with Numbers	13

Business Idea

Summary of Business Idea

The company YottaByte is developing **DigMap solution** – an free and open source, cloud-based **Geographic Information (GI) delivery system** for public and private sector core-users to help them: (1) to easier disseminate online spatial and non-spatial digital data to end-users (through digitally signed PDF report with excerpt maps and embedded data, which excludes problem of any additional paper work) and (2) standardized offline storage and printing on end-user's computer (which excludes problem of any need for physical presence and saves time).

The **core-users** are: (A) public sector, government institutions like Cadaster, Transport control, Cross-border administration, Environment protection agencies and (B) private sector, small and medium enterprises (SMEs). The **end-users** are general public and other business users from domains of Transport, Health, Environment, Finance and all users categories defined in 21 bottom-up themes from EU-INSPIRE directive.

Innovation is that an operational implementation is based on a new standardized open interface (OGC WPS – Open Geospatial Consortium Web Processing Service) which leads to interoperability and portability and is aligned with Open Data objective and Digital Agenda for Europe which promotes creation, production and distribution of Public Sector Information (PSI) as digital content and new value-added services on a free market. The DigMap state-of-the-art service components are re-usable, encapsulated and standardized pluggable extension, therefore can be broadly deployed in other applications and as a part of National Spatial Data Infrastructure, reducing future costs.

Full Description of Business Idea

Business Model Canvas:

Business model is based on selling professional consulting & education, customization, implementation & support service for free and open source DigMap solution to core-users: (A) small & medium enterprises (B2B segment) and (B) government institutions (B2G segment).

The company will use well-known "razor & blades" business model. The free "razor" is free & open source DigMap – Digital Map excerpt software per se, while the payable "blades" are subscription services for implementation, maintenance & support, training & education, consultation and customized development. The company will act as intermediary that offers DigMap solution to core-users (B2B and B2G customer segments: SMEs and Government institutions) which facilitates the access to PSI resources for end-users (general public and other private users).

The main costs are related to the DigMap initial development and wages for the technical experts and software engineers. FI-WARE general enablers will be used extensively, while two referent customers and partners from B2B segment and B2G segment for tuning & developing DigMap are already found and they have expressed an interest to help with the co-financing development investment as partners in the future project.

Total market size is estimated on 8.500.000€ for local Croatian market (170.000.000€ for EU). Our plan is to tune the business at local Croatian market first and then to gradually scale it to larger EU market.

The 5-years financial model estimates positive earnings in year 3 and initial investment payback period of 4 years.

Conclusions extracted from interviews with potential customers:

From interviewing potential customer we have concluded **86.7%** would prefer a use of interoperable software for creation of digital map excerpt, digitally signed, based on free and open source software. On the scale 1-10 (where 0=Not attractive at all and 10=Vary attractive) our customers judge on average the DigMap solution **6.198**.

For free & open DigMap solution we offer payable services and our customers would pay for the following average prices on the local market:

- 1103 €/year for Installation and configuration,
- 1632 €/year for Commercial support and maintenance,
- 1603 €/year for User and administrator training,
- 1932 €/year for Consultancy hours included and
- more than 3036 €/year for Dedicated customized development.

Therefore, we have packed these 5 service levels into three packages: (1) Basic, (2) Standard and (3) Premium service package as shown by table below, with following prices:

- 4000 €/year for **Basic** service
- 6000 €/year for **Standard** service
- 9000 €/year for **Premium** service

Service type	Basic	Standard	Premium
Installation and configuration	✓	✓	✓
Commercial support and maintenance	✓	✓	✓
User and administrator training	✓	✓	✓
Consultancy hours included		✓	✓
Dedicated development			✓
Price per year	4.000,00 €	6.000,00 €	9.000,00 €

Lessons learned thanks to FINODEX

The lessons we have learned thanks to Finodex are:

- (1) Lesson about Open Data Business Models and re-use of Public Sector Information (PSI),
- (2) Lesson about customer's problem hypothesis, customer development and lean methodology,
- (3) Lesson about Solution-fit hypothesis and designing online questionnaires & offline interviews and
- (4) Lesson about FIWARE Generic enablers.

Business Canvas Model (BMC) with Numbers

Summary

The company will use well-known “razor & blades” business model. The free “razor” is free & open source DigMap – Digital Map excerpt software per se, while the payable “blades” are subscription services for implementation, maintenance & support, training & education, consultation and customized development. The company will act as intermediary that offers DigMap solution to core-users (B2B and B2G customer segments) which facilitates the access to PSI resources for end-users (general public and other private users).

The main costs are related to the DigMap initial development and wages for the technical experts. FI-WARE general enablers will be used extensively, while two referent customers and partners from B2B segment and B2G segment for tuning & developing DigMap are already found.

Total market size is 8.500.000€ for local Croatian market (170.000.000€ for EU). The 5-years financial model estimates positive earnings in year 3 and payback period of 4 years for initial investment.

BMC Value Proposition

Value Proposition	
VP-1: Professional consulting & educational service for DigMap - (“blade #1”)	Croatia: 3500€/customer/yr EU: 7000€/customer/yr
VP-2: Implementation & supporting service for DigMap - (“blade #2”)	Croatia: 2700€/customer/yr EU: 5400€/customer/yr
VP-3: Customized development service for DigMap - (“blade #3”)	Croatia: 3000€/customer/yr EU: 6000€/customer/yr
VP-4: Provision of digitally signed map excerpt software based on PSI in an “open” manner - (free “razor”)	Croatia: 0 €/customer/yr EU: 0 €/customer/yr

DigMap solution meets the customer needs for an open, cloud-based Geographic Information (GI) delivery system which: (1) helps core-users to easier disseminate online spatial and non-spatial digital PSI data (through digitally signed pdf report with excerpt maps and embedded data, which excludes any additional paper work) and (2) helps end-users to standardized offline storage and printing on end-users’ computer.

Value proposition hinges on an attractive, free initial offer (“razor”) that encourages continuing future purchases of follow-up items or services (“blades”).

Value proposition is based on: “VP4 – Provision of digitally signed map excerpt software based on PSI” – which represent free initial offer (zero cost price) that acts as marketing,

while the future purchases of follow-up items or services are represented by following value propositions: “VP-1: Professional consulting & educational service for DigMap”, “VP-2: Implementation & supporting service for DigMap”, “VP-3: Customized development service for DigMap”.

Innovation or newness which distinguishes DigMap from its competitors is an operational implementation based on a new standardized open interface (OGC WPS – Open Geospatial Consortium Web Processing Service) which leads to better accessibility, interoperability and portability. The DigMap has state-of-the-art design of service components that are re-usable, encapsulated and standardized pluggable extension and therefore can be broadly deployed and customize in other applications as a part of National Spatial Data Infrastructure, which reduces future development costs.

BMC FIWARE Generic Enablers

FIWARE Generic Enablers	
GE-1: GIS Data Provider - Geoserver/3D	Croatia: 20 customer/yr EU: 40 customer/yr
GE-2: Data Visualization and Analysis	Croatia: 20 customer/yr EU: 40 customer/yr
GE-3: IaaS Resource Management	Croatia: 20 customer/yr EU: 40 customer/yr
GE-4: Revenue Settlement and Sharing System - RSS RI	Croatia: 10 customer/yr EU: 20 customer/yr

FIWARE Generic Enablers (GE) used are:

- GE-1: GIS Data Provider – Geoserver/3D
- GE-2: Data Visualization and Analysis
- GE-3: IaaS Resource Management
- GE-4: Revenue Settlement and Sharing System – RSS RI

While GE 1-3 are going to be used by all users of DigMap all the time, according to the results from the online questionnaire and individual interviews GE-4 that allows data billing will be used only partly by 45% of core-users.

BMC Key Activities/Resources

Key Activities	
KA-1: Development of DigMap	6 developers x 0.5 years
KA-2: High quality: - consulting & educational - implementation & supporting service for DigMap	Croatia: 2 employee/yr EU: 4 employee/yr
Key Resources	
KA-3: Technical expertise for: - development of DigMap - consulting & education - implementation & support	Croatia: 2 employee/yr EU: 4 employee/yr
KA-4: Financial resources for: - professional front-end office rent - notebooks (hw+sw) for employees - personalized ERP system for excellent customer relation management (CRM)	1 office equipped with 1 notebook / employee 1 ERP with customized CRM / office

The key activities are:

- KA-1: Developing DigMap, which is currently developed as a simple demo or Proof of Concept (PoC), has to be further developed into minimal viable product (MVP). For this project 6 developers are needed and our estimation is that 6 months would be sufficient for final development.
- KA-2: High quality consulting & educational and implementation & supporting service for DigMap has to be offered otherwise the penetration of the innovation into the market won’t be suffice to sustain the project. Our estimation is that 2 employees would be sufficed in the first and second year until number of clients rises to 20.

The key resources are:

- KA-3: Technical expertise for: development of DigMap, consulting & education and implementation & support. Our people will be our greatest asset.
- KA-4: Financial resources for: 1 professional front-end office rent, 1 notebook per developer, 1 personalized ERP system for excellent customer relationship management.

BMC Key Partners

Key Partners	
KP-1: Referent customers for tuning & development:	
- Agency for environment protection	
- Geo-Meteo	
	2 referent customers in 1st year:
	1 from B2B segment, 1 from B2G segment
KP-2: National Agencies for Real Estate Cadastre	
	1 large reference for
	Proof of Product & Proof for Market Scale
KP-3: FI-WARE	
with Revenue Settlement & Sharing - RSS RI support	
(as well with other enumerated generic enablers)	
	1 data billing GE for B2B and B2G clients
	that want implementation of data billing

The key partners are:

- KP-1: Two referent customers from B2B and B2G segment for tuning & developing DigMap solution. So far, we have found strong interest for collaboration from Agency for environment protection (B2G) and Geo-Meteo (B2B) client. They have also expressed willingness to help co-financing the initial development investment as a project partner.
- KP-2: National Agency for Real Estate Cadastre as a 1 large reference for the Proof of Product and subsequent Proof for Market scalability would be appreciated.

- KP-3: FI-WARE with all generic enablers support would be substantial. E.g. generic enabler for Revenue Settlement & Sharing would be needed for the clients that would like to implement data billing option for their services.

BMC Cost Structure

Cost Structure	
CS-1: DigMap initial software development	
	Croatia: 24.000€/year x 6 developers x 0.5 years = 72.000 € lump
CS-2: Wages for professionals in consulting & education, implementation & supporting service for DigMap	
	Croatia: 24.000€/employee/yr * 2 employee = 48.000€/yr
	EU: 40.000€/employee/yr * 4 employee = 160.000€/yr
CS-3: Wages for dedicated development and customization service for DigMap	
	Croatia: 24.000€/employee/yr * 1 employee = 24.000€/yr
	EU: 40.000€/employee/yr * 2 employee = 80.000€/yr
CS-4: License and maintenance costs for:	
- ERP system with personalized CRM + notebooks (HW+SW) for developers	
	ERP: 10.000€ lump + 1000€/yr
	HW+SW: lump 1000€/employee
CS-5: Rent of professional office	
	Croatia: 5000€/yr
	EU: 10.000€/yr
CS-6: Cost of Sales + G&A Operating Expenses	
	Croatia: 5% of Revenue + 2600€/yr
	EU: 5% of Revenue + 5200€/yr
TOTAL COSTS:	
	Initial Investment: 85.000€
	Croatia: 85.000€/yr
	EU: 278.800€/yr

The most important costs are:

- CS-1: DigMap initial software development where 6 developers for 6 months and their gross wages at the local market are around 24.000€/year.
- CS-2: Wages for professional consulting & education, implementation & supporting service. These costs are variable and labour extensive (as all services) and are dependent on number of clients and orders. We estimate staff capacity around 10 clients per employee per year.
- CS-3: Wages for dedicated development and customization service for DigMap would require approximately 3

months per client and would require 1 employee workload per client.

- CS-4 and CS-5 are cost of renting, furnishing and equipping the professional office with hardware and software needed for project development. At the local market we estimated these cost 5000€/yr for office rent, 1000€/employee for computer equipment. Customized ERP and CRM system would cost us 10.000€ lump sum and 1000€/year for license.
- CS-6 are Cost of Sale for promotion, sales and distribution of DigMap and these cost are estimated as 5% of revenue. Operating General & Administrative expenses are estimated 2400€/year at local market.

We have focused on minimizing all our costs until we establish our position on the market and until we receive enough customer orders annually to reach a positive cash flow and to become breakeven with cash balance. Customized ERP system with personalized CRM is needed to standardize our services and to reach economy of scale in our business model.

BMC Customer Relationship / Sales Channels

To ensure the survival and success of our business we need these types of customer relationships:

- CR-1: Personal Assistance to achieve long-term relationship with our customer. From the survey results we estimate 25% of our clients will require personalized assistance in customized development, consultancy & support service for DigMap, therefore the most expensive - Premium service.
- CR-2: Automated Service to achieve short-term customer relationship for implementation, standardized training & education (Basic & Standard) service for DigMap. Standardization of the service will allows us to accelerate our service processes and achieve economy of scale to some extent. From the survey results 75% of client orders will require this kind of service, which will require customized ERP and personalized CRM system implemented on our side.

Customer Relationship	
CR-1: Personal Assistance	
long-term for:	
- customized development,	
- consultancy and	
- support service for DigMap	
	Croatia: 4 customer/yr
	EU: 8 customer/yr
CR-2: Automated Service	
standardized short-term for:	
- implementation,	
- training and	
- education service for DigMap	
	Croatia: 16 customer/yr
	EU: 32 customer/yr
Sales Channels	
CR-3: Own Direct Sales Channels	
(based on extensive networking & customer base recommendations)	
	Croatia: 16 customer/yr
	EU: 32 customer/yr
CR-4: Through the DigMap cloud-computing platform	
(small marketing by leaving a DigMap footprint and Yottabyte stamp on the solution delivered to the partners)	
	Croatia: 4 customer/yr
	EU: 8 customer/yr

- CR-3: Own Direct Sales channels will be our main customer source and will be based on extensive networking and recommendation from our previous clients. Therefore building satisfied customer base will be our primary goal.
- CR-4: We will use small marketing channel by leaving a DigMap footprint and company stamp on our solutions (digital excerpts) that will be delivered to all end-users.

BMC Customer Segments

Customer Segments	
CS-1: Small and medium enterprises (B2B clients):	
<i>Small enterprises (1392):</i>	
- real-estate companies (1392 in Croatia)	
<i>Medium enterprises (127):</i>	
- Municipal utilities and water supply companies (127)	
<i>Large enterprises (10):</i>	
- Croatian Forrests Ltd.	
- Croatian Roads Ltd.	
- Croatian Rail Infrastructure Ltd., etc.	
Croatia: ~1500 customers * 5000€/customer =	
7.500.000€	
EU: ~15.000 customers * 10.000€/customer =	
150.000.000€	
CS-2: Government Institutions (B2G clients):	
<i>- Land Register Courts (64)</i>	
(64 cadastral municipal courts in Croatia)	
<i>- Ministries of Republic of Croatia (4)</i>	
1. Ministry of Construction and Physical Planning, 2.	
Ministry of Defence, 3. Ministry of Maritime Affairs,	
Transport and Infrastructure, 4. Ministry of Culture).	
<i>- Agencies and Institutes of Republic of Croatia (6)</i>	
(1. Croatian Bureau of Statistics, 2. State Institute for	
Nautre Protection, 3. Croatian Environmental Agency,	
Paying Agency, 4. Croatian Regulatory Authority for	
Network Industries, 5. Croatian Institute for Geological	
Survey, 6. Croatian Hydrographic Institute)	
<i>- Municipal Planning Departments in major cities (127)</i>	
(Zagreb, Split, Osijek, Rijeka, Velika Gorica, etc)	
Croatia: ~200 customers * 5000€/customer =	
1.000.000€	
EU: ~2000 customers * 10.000€/customer =	
20.000.000€	
TOTAL MARKET SIZE:	
Croatia: 8.500.000€	
EU: 170.000.000€	

Through our customer development survey and market research we have identified two important customer segments:

- CS-1: Small and medium enterprises (SMEs) with whom we are going to develop B2B business relations. Market segment consists of 1392 small enterprises (real-estate companies in local Croatian market), 127 medium enterprises (municipal utilities companies) and around 10 large enterprises. In total around 1500 customers at local market. Since our average price for DigMap services is 5000€/customer we estimate local market around 7.500.000€, while the larger EU market we have scale ten times in size and two times in price.

- CS-2: Government institutions with whom we are going to develop B2G business relation. Market segment consists of: 64 Land Register Courts, 4 large Ministries, 6 large Agencies and 127 municipal planning departments in major cities. In total around 200 customers at local market. Since our average price for DigMap services is 5000€/customer we estimate local market around 1.000.000€, while the larger EU market we have scale ten times in size and two times in price. Although using market GDP ratios (EU vs. Croatia) the scale factor is around 300 we have reduced it to 10 according to our sales & marketing, organization and production capacity. Due to double aggregate demand measured by double GDP per capita in EU than in local Croatian market, prices for EU markets are doubled.

Total market size is 8.500.000€ for local Croatian market and 170.000.000€ for EU. We believe these estimations are fair and market sizes are sufficient for developing sustainable business.

BMC Revenue Streams

Revenue Streams	
RS-1: Subscription recurring fee for:	
- BASIC service (4000€/yr) for DigMap which includes:	
(1) installation & configuration, (2) support & maintenance, (3) administrator training	
Croatia: 4000€/customer/yr * 10 customer = 40.000€/yr	
EU: 8000€/customer/yr * 20 customer = 160.000€/yr	
RS-2: Subscription recurring fee for:	
- STANDARD service (6000€/yr) for DigMap which includes:	
(1) installation & configuration, (2) support & maintenance, (3) administrator training, (4) consultancy	
Croatia: 6000€/customer/yr * 6 customer = 36.000€/yr	
EU: 12.000€/customer/yr * 12 customer = 144.000€/yr	
RS-3: Subscription recurring fee for:	
- PREMIUM service (9000€/yr) for DigMap which includes:	
(1) installation & configuration, (2) support & maintenance, (3) administrator training, (4) consultancy,	
(5) dedicated development and customization	
Croatia: 9.000€/customer/yr * 4 customer = 36.000€/yr	
EU: 18.000€/customer/yr * 8 customer = 144.000€/yr	
TOTAL REVENUE:	
Croatia: 112.000€/yr	
EU: 448.000€/yr	
TOTAL EARNINGS:	
Croatia: 27.000€/yr	
EU: 169.800€/yr	

There are 3 independent revenue streams from 3 DigMap service packages:

- RS-1: Subscription recurring fee for BASIC service package.
- RS-2: Subscription recurring fee for STANDARD service package.
- RS-3: Subscription recurring fee for PREMIUM service package.

Survey results for the local market show that the customers (from both B2B and B2G market segments) would be ready to pay subscription in a range of 4000€/year for RS-1 and 6€/year for RS-2 and 9.000€/year for RS-3. The prices for developed

EU market are doubled.

Financial model for 5-years at local market is shown in table below. As “representative year” we have chosen year 3. By that time at local market we expect customer base of total 20 subscription paying customers, revenue of 112.000€, of which 5% or 5600€/yr will be spend as Cost of Sales. Initial investment of 85.000€ will be needed for development of final product and equipment, and at time 2 experienced software engineers will be permanently employed and the founder will be the third employee. Operating expenses will be 5000€/yr for office rent and 2400€/yr for general & administrative expense. We expect positive Operating Income (Earnings Before Interest and Tax - EBIT) of 27.000€ in year 3 and in next year we expect to be break-even in Retained Earnings, which gives initial investment pay-back period of 4 years.

Financial estimations for larger EU market, where we plan to expend later, are given in Business Canvas.

Financial Model						
Assumptions	Assumptions	Year 1	Year 2	Year 3	Year 4	Year 5
Growth Rate			50%	75%	100%	50%
Key Driver 1 (new Basic users)		2	3	5	9	13
Cumulative 1		2	5	10	18	31
Key Driver 2 (new Standard users)	0,5	1	2	3	5	7
Cumulative 2		1	3	6	10	17
Key Driver 3 (new Premium users)	0,5	1	1	2	3	4
Cumulative 3		1	2	4	6	10
Churn (Loss) Rate (%/Year)	5,00%		0	0	1	1
Sub-Total (new users)		4	6	10	17	24
Sub-Total (cumulative)		4	10	20	34	58
Revenue	Assumptions	year 1	year 2	year 3	year 4	year 5
Basic service price/year	€4.000,00	€8.000	€20.000	€40.000	€72.000	€124.000
Standard service price/year	€6.000,00	€6.000	€18.000	€36.000	€60.000	€102.000
Premium service price/year	€9.000,00	€9.000	€18.000	€36.000	€54.000	€90.000
Sub-Total		€23.000	€56.000	€112.000	€186.000	€316.000
Costs of Goods Sold	Assumptions	year 1	year 2	year 3	year 4	year 5
Cost of Sales (COS)	5,00%	€1.150	€2.800	€5.600	€9.300	€15.800
Sub-Total		€1.150	€2.800	€5.600	€9.300	€15.800
Expenses	Assumptions	year 1	year 2	year 3	year 4	year 5
Research & Development						
Initial Development (labor+erp+hw+sw)	€85.000	€85.000				
Engineer 1 (per year)	€24.000	€24.000	€24.000	€24.000	€24.000	€24.000
Engineer 2 (per year)	€24.000			€24.000	€24.000	€24.000
Founder & CEO (per year)	€24.000	€24.000	€24.000	€24.000	€24.000	€24.000
Operating Expenses G&A						
Rent (per year)	€5.000	€5.000	€5.000	€5.000	€5.000	€5.000
Licenses (per year)	€1.000	€1.000	€1.000	€1.000	€1.000	€1.000
Legal (per year)	€380	€380	€380	€380	€380	€380
Hosting (per year)	€300	€300	€300	€300	€300	€300
Travel (per year)	€600	€600	€600	€600	€600	€600
Miscellaneous (per year)	€120	€120	€120	€120	€120	€120
Sub-Total	\$2.400	€140.400	€55.400	€79.400	€79.400	€79.400
	Assumptions	year 1	year 2	year 3	year 4	year 5
Gross Profit		€21.850	€53.200	€106.400	€176.700	€300.200
EBIT (Operating Income)		-€118.550	-€2.200	€27.000	€97.300	€220.800
Retained Earnings		-€118.550	-€120.750	-€93.750	€3.550	€224.350

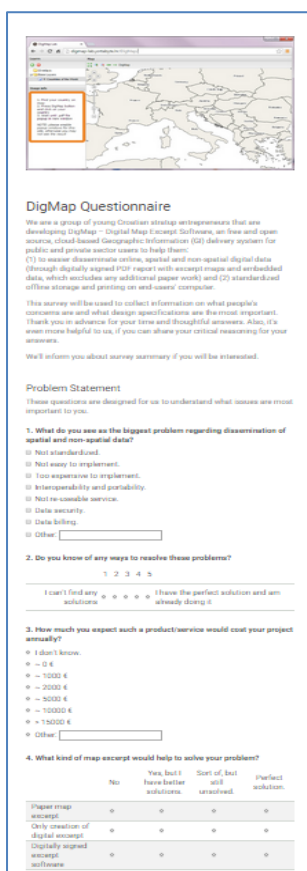
Conclusions Extracted From Interviews with Potential Customers / Users

Summary of Conclusions Extracted From Interviews with Potential Customers / Users

From interviewing potential customer we have concluded **86.7%** would prefer a use of interoperable software for creation of digital map excerpt, digitally signed, based on free and open source software. On the scale 1-10 (where 0=Not attractive at all and 10=Vary attractive) our customers judge on average the DigMap solution **6.192**.

For free & open DigMap solution we offer payable services and our customers would pay for the following average prices on the local market: 1103 €/year for Installation and configuration, 1632 €/year for Commercial support and maintenance, 1603 €/year for User and administrator training, 1932 €/year for Consultancy hours included and more than 3036 €/year for Dedicated customized development.

Full Description of Interviews



DigMap Questionnaire

We are a group of young Croatian strategic entrepreneurs that are developing DigMap - Digital Map Excerpt Software, an free and open source, cloud based Geographic Information (GI) delivery system for public and private sector users to help them:

(1) to easier disseminate online, spatial and non-spatial digital data (through digitally signed PDF report with excerpt maps and metadata data, which includes any additional paper world and (2) standardized offline storage and printing on end-user's computer

This survey will be used to collect information on what people's concerns are and what design specifications are the most important. Thank you in advance for your time and thoughtful answers. Also, it's even more helpful to us, if you can share your critical reasoning for your answers.

We'll inform you about survey summary if you will be interested.

Problem Statement

These questions are designed for us to understand what issues are most important to you.

1. What do you see as the biggest problem regarding dissemination of spatial and non-spatial data?

☐ Not standardized
☐ Not easy to implement.
☐ Too expensive to implement.
☐ Interoperability and portability.
☐ Not re-useable service.
☐ Data security.
☐ Data billing.
☐ Other: _____

2. Do you know of any ways to resolve these problems?

1 2 3 4 5

I can't find any solutions ☐ I have the perfect solution and am already doing it

3. How much you expect such a product/service would cost your project annually?

☐ I don't know.
☐ ~ 0 €
☐ ~ 1000 €
☐ ~ 2000 €
☐ ~ 5000 €
☐ ~ 10000 €
☐ ~ 15000 €
☐ Other: _____

4. What kind of map excerpt would help to solve your problem?

	No	Yes, but I have better solutions	Sort of, but still unsolved	Perfect solution
Paper map excerpt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Only creation of digital excerpt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digitally signed excerpt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digitally signed excerpt software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digitally signed excerpt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

We have made 8 personal (offline) interviews with our B2B and B2G key partners and also have designed online DigMap questionnaire (<http://goo.gl/8rQwlm>) which dozens we have sent by email to our potential customers from target market and so far we have collected 15 high-quality responses.

The questionnaire is separated in two sections:

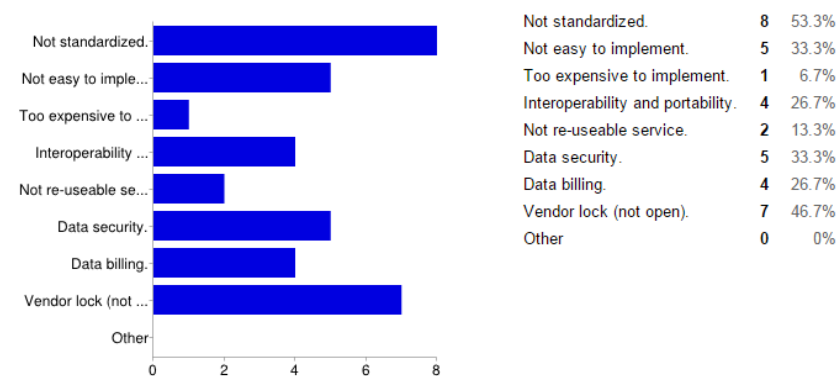
(A) Problem Statement – where we have tested problem hypothesis and

(B) Solution Statement – where we have tested hypothesis regarding the fitting of our DigMap solution to the customers' problem.

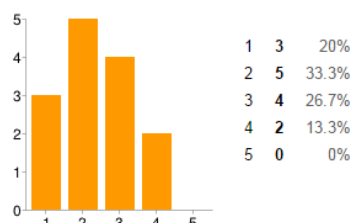
From the interview results we can conclude the following:

Problem Statement:

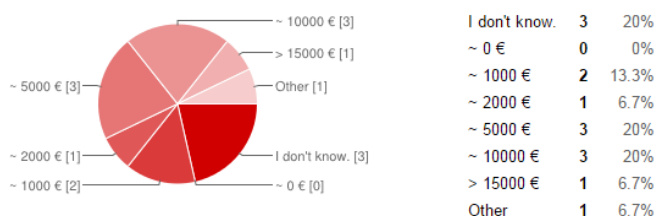
1) The biggest problem regarding dissemination of spatial and non-spatial data our customers have are:



2) On the scale 1-5 (where 1= I can't find any solutions and 5= I have the perfect solution and am already doing it) our customers know ways to resolve these problems:

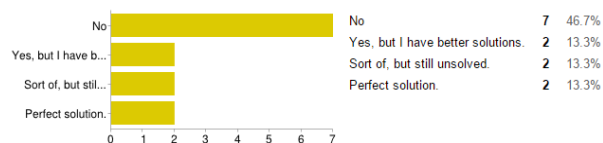


3) Our customers expect such a product/service for their projects would cost annually:

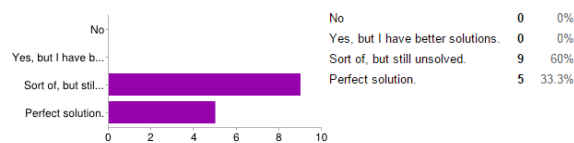


4) From different kinds of map excerpts they would prefer:

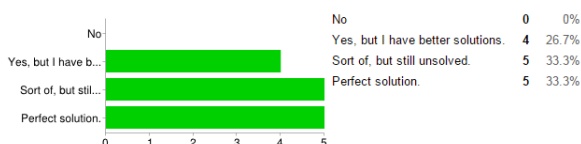
a) Paper map excerpt



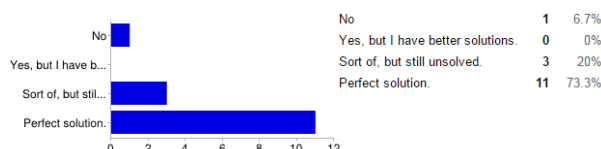
b) Digitally signed excerpt software



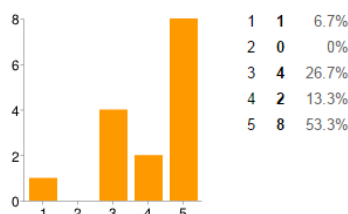
c) Only creation of digital excerpt a sort



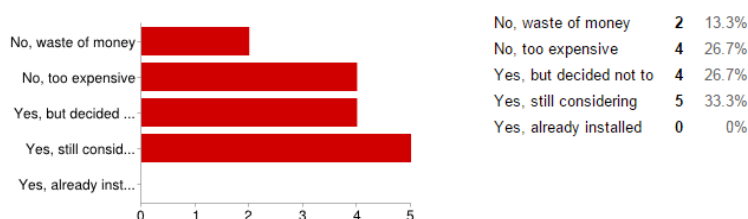
d) Digitally signed excerpt software based on free and open source software



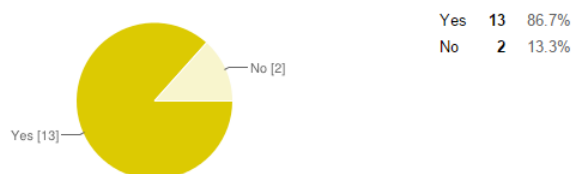
5) On the scale 1-5 (1= Don't care and 5= Public geographic information have to be available online) the idea of online dissemination of public sector geographic information appeals to our customers significant:



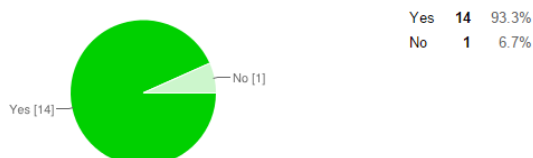
6) Regarding the amount of consideration about Digital Map Excerpt software so far:



7) 86.7% of our customers would prefer a use of interoperable software for creation of digital map excerpt, digitally signed, based on free and open source software.



8) 93.3% of our customers would prefer end-users to be able to standardized offline storage and printing on their computer.

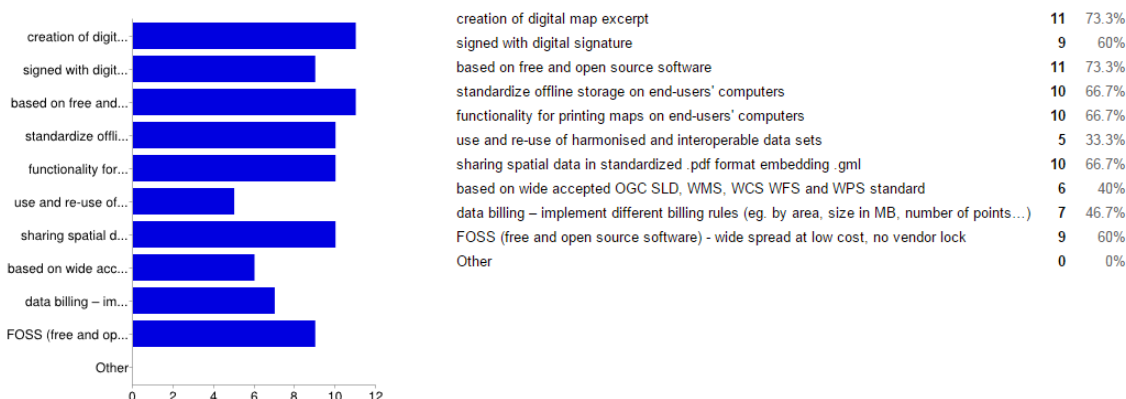


9) We have also offered a demonstration of web application (available at: <http://digmap-lab.yottabyte.hr/>) and our customers think (1=Too complex, 5=Awesome!):

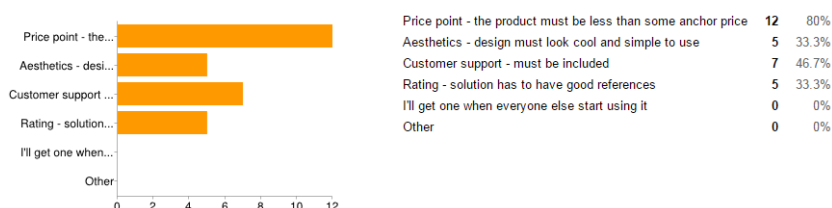


Solution Statement:

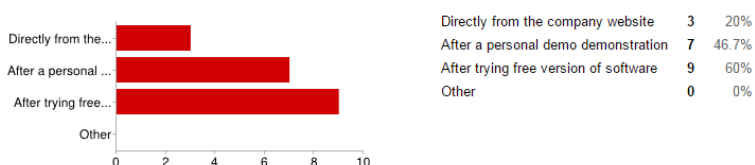
10) From the list of various DigMap features our customers would require the most:



11) The most important considerations in deciding whether to purchase this item would be:

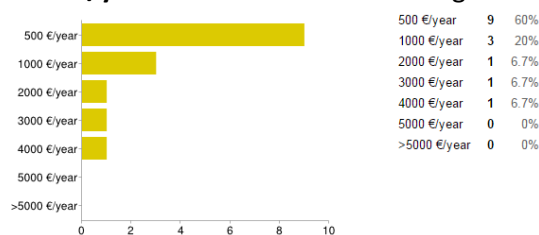


12) If our customers were to order our product they would get it:

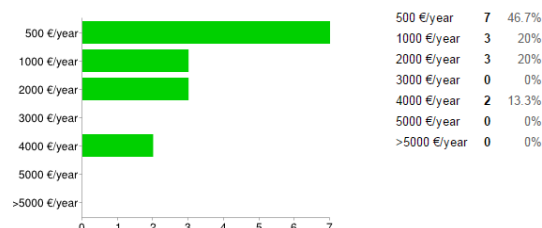


13) The most important question in the questionnaire was - how much supporting services for free & open DigMap solution would worth to you as a potential customer? The weighted average prices are:

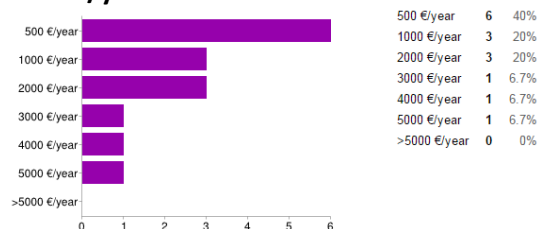
a) **1103 €/year** for Installation and configuration



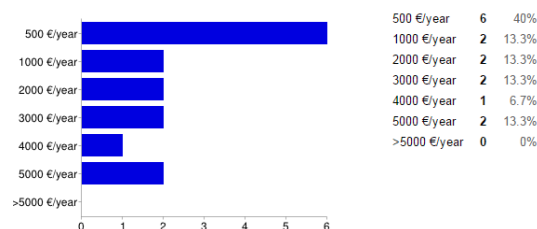
b) **1632 €/year** for Commercial support and maintenance



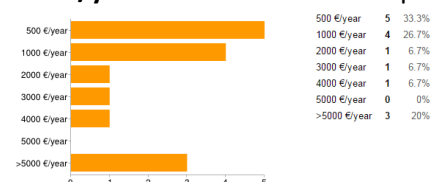
c) **1604 €/year** for User and administrator training



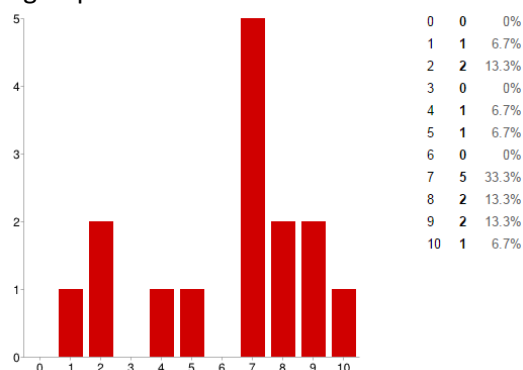
d) **1932 €/year** for Consultancy hours included



e) **3036 €/year** for Dedicated development



14) On the scale 1-10 (where 0=Not attractive at all and 10=Vary attractive) our customers judge on average the DigMap solution **6.198**.



15) Regarding demographics of our clients:

- the most of them (66.7%) have heard about innovative products - from working colleagues
- the most of them live in Zagreb, Croatia
- 73.3 % of them are male and 26.7 % are female
- 93.3 % are age 30-39, 6.7% are age 40-49
- 66.7 % are price-sensitive customer
- the most customers 66.7% were from SME segment, and 33.3% were from government segment.

Lessons Learned Thanks to FINODEX

The lessons we have learned thanks to Finodex are enumerated in the table below:

Lesson Learned Thanks to FINODEX	Short Description (3-5 lines describing the lesson learned)	Have you done something to address this in the Business Idea (please remember to use this in the first section of this proposal)
Lesson about Open Data Business Models	Open Data Business Model and re-use of Public Sector Information (PSI) can have business value is a relatively new concept. Public accessible data re-use can become a successful business model with high added value.	We addressed this lesson learned using Lean methodology for business development and using Business Model Canvas. The razors & blades model have been chosen thanks to FINODEX Handbook for Entrepreneurs. In our case: the free “razor” is free & open source DigMap – digital map excerpt software per se, while the payable “blades” are subscription services for implementation, maintenance and support, training and education, consultation and dedicated customized development.
Hypothesis about customer’s problem	We only had a hypothesis about customer’s problem.	We addressed this lesson learned using online and offline questionnaire. The first half of the questionnaire was focused on Problem Statement where we have tested the customer’s problem.
Hypothesis that our solution will fit the customer’s needs	We only had a hypothesis that our solution will fit customer’s needs.	We addressed this lesson learned using online and offline questionnaire. The second half of the questionnaire was focused on Solution Statement where we have tested the solution fit to customer’s needs.
FIWARE Generic enablers catalogue	Generic Enabler implementations hosted in a cloud environment cover a wide range of aspects and are based on open specifications (APIs).	We addressed this lesson learned using 4 different GEs: <ul style="list-style-type: none"> • GIS Data Provider - Geoserver/3D, • Data Visualization and Analysis, • IaaS Resource Management, • Revenue Settlement and Sharing System - RSS RI.

Appendix: Business Model Canvas Spreadsheet with Numbers

Key Partners KP-1: Referent customers for tuning & development: <ul style="list-style-type: none"> - Agency for environment protection - Geo-Meteo <p>2 referent customers in 1st year; 1 from B2B segment, 1 from B2G segment</p>	Key Activities KA-1: Development of DigMap <p>6 developers x 0.5 years</p>	Value Proposition VP-1: Professional consulting & educational service for DigMap - ("blade #1") <p>Croatia: 3500€/customer/yr EU: 7000€/customer/yr</p>	Customer Relationship CR-1: Personal Assistance <p>long-term for: - customized development, - consultancy and - support service for DigMap</p> <p>Croatia: 4 customer/yr EU: 8 customer/yr</p>	Customer Segments CS-1: Small and medium enterprises (B2B clients): <p>Small enterprises (1392): - real-estate companies (1392 in Croatia)</p> <p>Medium enterprises (127): - Municipal utilities and water supply companies (127)</p> <p>Large enterprises (10): - Croatian Forrests Ltd. - Croatian Roads Ltd. - Croatian Rail Infrastructure Ltd., etc.</p> <p>Croatia: ~1500 customers * 5000€/customer = 7.500.000€ EU: ~15.000 customers * 10.000€/customer = 150.000.000€</p>
KP-2: National Agencies for Real Estate Cadastre <p>1 large reference for Proof of Product & Proof for Market Scale</p>	KA-2: High quality: <ul style="list-style-type: none"> - consulting & educational - implementation & supporting service for DigMap <p>Croatia: 2 employee/yr EU: 4 employee/yr</p>	VP-2: Implementation & supporting service for DigMap - ("blade #2") <p>Croatia: 2700€/customer/yr EU: 5400€/customer/yr</p>	CR-2: Automated Service <p>standardized short-term for: - implementation, - training and - education service for DigMap</p> <p>Croatia: 16 customer/yr EU: 32 customer/yr</p>	CS-2: Government Institutions (B2G clients): <p>- Land Register Courts (64) (64 cadastral municipal courts in Croatia)</p> <p>- Ministries of Republic of Croatia (4) 1. Ministry of Construction and Physical Planning, 2. Ministry of Defence, 3. Ministry of Maritime Affairs, Transport and Infrastructure, 4. Ministry of Culture).</p> <p>- Agencies and Institutes of Republic of Croatia (6) (1. Croatian Bureau of Statistics, 2. State Institute for Naute Protection, 3. Croatian Environmental Agency, Paying Agency, 4. Croatian Regulatory Authority for Network Industries, 5. Croatian Institute for Geological Survey, 6. Croatian Hydrographic Institute)</p> <p>- Municipal Planning Departments in major cities (127) (Zagreb, Split, Osijek, Rijeka, Velika Gorica, etc)</p> <p>Croatia: ~200 customers * 5000€/customer = 1.000.000€ EU: ~2000 customers * 10.000€/customer = 20.000.000€</p>
KP-3: FIWARE <p>with Revenue Settlement & Sharing - RSS RI support (as well with other enumerated generic enablers)</p> <p>1 data billing GE for B2B and B2G clients that want implementation of data billing</p>	Key Resources KA-3: Technical expertise for: <ul style="list-style-type: none"> - development of DigMap - consulting & education - implementation & support <p>Croatia: 2 employee/yr EU: 4 employee/yr</p>	VP-3: Customized development service for DigMap - ("blade #3") <p>Croatia: 3000€/customer/yr EU: 6000€/customer/yr</p>	Sales Channels CR-3: Own Direct Sales Channels <p>(based on extensive networking & customer base recommendations)</p> <p>Croatia: 16 customer/yr EU: 32 customer/yr</p>	TOTAL MARKET SIZE: <p>Croatia: 8.500.000€ EU: 170.000.000€</p>
	KA-4: Financial resources for: <ul style="list-style-type: none"> - professional front-end office rent - notebooks (hw+sw) for employees - personalized ERP system for excellent customer relation management (CRM) <p>1 office equipped with 1 notebook / employee 1 ERP with customized CRM / office</p> <p>Croatia: 0 €/customer/yr EU: 0 €/customer/yr</p>	VP-4: Provision of digitally signed map excerpt software based on PSI in an "open" manner - (free "razor") <p>Croatia: 0 €/customer/yr EU: 0 €/customer/yr</p>	CR-4: Through the DigMap cloud-computing platform <p>(small marketing by leaving a DigMap footprint and Yottabyte stamp on the solution delivered to the partners)</p> <p>Croatia: 4 customer/yr EU: 8 customer/yr</p>	

Cost Structure	FIWARE Generic Enablers	Revenue Streams
CS-1: DigMap initial software development Croatia: 24.000€/year x 6 developers x 0.5 years = 72.000 € lump	GE-1: GIS Data Provider - Geoserver/3D Croatia: 20 customer/yr EU: 40 customer/yr	RS-1: Subscription recurring fee for: - BASIC service (4000€/yr) for DigMap which includes: (1) installation & configuration, (2) support & maintenance, (3) administrator training Croatia: 4000€/customer/yr * 10 customer = 40.000€/yr EU: 8000€/customer/yr * 20 customer = 160.000€/yr
CS-2: Wages for professionals in consulting & education, implementation & supporting service for DigMap Croatia: 24.000€/employee/yr * 2 employee = 48.000€/yr EU: 40.000€/employee/yr * 4 employee = 160.000€/yr	GE-2: Data Visualization and Analysis Croatia: 20 customer/yr EU: 40 customer/yr	RS-2: Subscription recurring fee for: - STANDARD service (6000€/yr) for DigMap which includes: (1) installation & configuration, (2) support & maintenance, (3) administrator training, (4) consultancy Croatia: 6000€/customer/yr * 6 customer = 36.000€/yr EU: 12.000€/customer/yr * 12 customer = 144.000€/yr
CS-3: Wages for dedicated development and customization service for DigMap Croatia: 24.000€/employee/yr * 1 employee = 24.000€/yr EU: 40.000€/employee/yr * 2 employee = 80.000€/yr	GE-3: IaaS Resource Management Croatia: 20 customer/yr EU: 40 customer/yr	RS-3: Subscription recurring fee for: - PREMIUM service (9000€/yr) for DigMap which includes: (1) installation & configuration, (2) support & maintenance, (3) administrator training, (4) consultancy, (5) dedicated development and customization Croatia: 9.000€/customer/yr * 4 customer = 36.000€/yr EU: 18.000€/customer/yr * 8 customer = 144.000€/yr
CS-4: License and maintenance costs for: ERP: 10.000€ lump + 1000€/yr HW+SW: lump 1000€/employee	GE-4: Revenue Settlement and Sharing System - RSS RI Croatia: 10 customer/yr EU: 20 customer/yr	TOTAL REVENUE: Croatia: 112.000€/yr EU: 448.000€/yr
CS-5: Rent of professional office Croatia: 5000€/yr EU: 10.000€/yr		
CS-6 Cost of Sales + G&A Operating Expenses Croatia: 5% of Revenue + 2400€/yr EU: 5% of Revenue + 4800€/yr		
TOTAL COSTS: Initial Investment: 85.000€ Croatia: 85.000€/yr EU: 278.200€/yr		TOTAL EARNINGS: Croatia: 27.000€/yr EU: 169.800€/yr