



DIGITAL ECONOMY IN KRI: A MARKET STUDY

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ABBREVIATIONS

DRC	Danish Refugee Council
FGD	Focus Group Discussion
KRG	Kurdistan Regional Government
KRI	Kurdistan Region of Iraq
IDP	Internally Displaced Person
ILO	International Labour Organization
IQD	Iraqi dinar
IT	Information technology
MoLSA	Ministry of Labour and Social Affairs
NGO	Non-Governmental Organisation
SAT	Swedish Academy for Training
ToT	Training of Trainers
TVET	Technical and Vocational Education and Training
USD	United States dollars

EXECUTIVE SUMMARY

Objectives

The objective of this report is to present the results of a **market study on the digital economy conducted** in the Kurdistan Region of Iraq (KRI). The study focuses on the digital skills needed by this sector of the market. The findings of this report will then be used to design a curriculum for digital skills which will be implemented at the public vocational training centres of KRI.

Methodology

The study has followed a qualitative modality including **33 interviews and three Focus Group Discussions (FGD)** with:

- Twenty-five interviews with enterprises from diverse sectors of the digital economy (service delivery, digital marketing, retail and e-commerce);
- One interview with the Directorate of Labour and Social Security at the Ministry of Labour and Social Affairs (MoLSA);
- Four interviews with public and two private vocational technical centres;
- Three FGD with 13 participants who either studied a subject related to the digital economy or who are looking for a job in the digital economy. These FGDs were complemented with two individual interviews with the same category (more specifically, Syrians based in Erbil looking for a job in the digital economy);
- One interview with an e-government stakeholder.

Findings

Legislative framework of the digital economy in KRI

- Interviewees report that company registration is a lengthy and costly process.
- The current legislative framework could better protect enterprises in the digital economy, mainly by better protecting their intellectual property and by protecting them against customers who cancel orders too late.
- Digital literacy remains a barrier preventing the digital economy from reaching a larger number of customers in KRI. This in turn slows down the development of the digital economy.
- Most enterprises seem to have no problems with dealing in cash. They would however benefit from online payments in order to protect themselves by retaining a fee for example from clients who cancel late.

The current landscape of the digital economy in KRI

- Based on the estimated percentage of digital economy users by interviewees, there are around 130,000 digital economy users in KRI.

- Using two different computations (one based on the gross domestic product and one based on the estimated revenue of interviewees), the share of the digital economy in the GDP is broadly estimated between 0.06% and 0.09% of total GDP (**15 to 20 million United States dollars** (USD) / year).
- The typical portrait of a founder in the digital economy is a young Iraqi Kurdish man (25 to 40 years old, on average). Despite this typical portrait, there are cases of successful women entrepreneurs in this sector.
- As described by the enterprises which were interviewed, digital economy users are generally young (mostly between 16 and 30), both male and female and mainly living in urban centres.
- Most employees working in the digital economy are young (mostly between 20 to 30 – sometimes up to 40). In the interviewee sample, 6.8% of employees are women while 7.8% are refugees, non-Iraqis or internally displaced persons (IDP).

The potential of the digital economy for employment and GDP growth

- In an optimistic scenario, the share of the digital economy in the GDP **could grow up to around 60%** over the next two years. This estimate is based on the growth expectations of each interviewee and were extrapolated to the whole sector.
- In the short term, according to the interviewees, the highest recruitments would be in digital marketing, data entry and web development.
- A creation of around **750 jobs is expected in this sector, including around 450 requiring digital skills**. This estimate is based on the expected recruitment of interviewees and was extrapolated to the whole sector.
- According to the cost-effectiveness analysis applied to the digitisation of the retail sector (supermarkets), adopting digital technologies is a profitable investment that can be paid off, generally, in less than two years. However, the employment opportunities requiring digital skills created by this digitisation process seem to be limited (4.3 new employees per supermarket).

Training offered in KRI

- The public vocational training centres which were visited included courses on **basic computer usage**. However, there were no courses related to more sophisticated digital skills.
- Vocational training centres report a high uncertainty regarding the budget of public vocational training centres for 2021 (and government salaries and operational budgets in general).
- This study did not find any **digital marketing training** in KRI.
- The public vocational training centres have the potential to host digital modules. It is however necessary to assess the technical level of trainers and to assess the software needed to organise the training.

Skills needed to work in the digital economy

- Enterprises in the digital economy report that they mostly need skills in **digital marketing, design, web development, content creation and mobile application development**.
- Based on the self-assessment of FGD participants, they seemed to have little knowledge of these skills, apart from content creation which is less a technical skill than the others.

- Enterprises in the digital economy report that they prefer candidates who are **trilingual** (English, Kurdish and Arabic) or at least bilingual (English and Kurdish or Arabic).
- The **barrier of the Kurdish language makes it more difficult for refugees**, non-Iraqis and IDPs to obtain a job in the digital economy in KRI. The Kurdish language is a barrier for both oral communication with the team and clients, as well as written communication for digital marketing for example.

Recommendations

Based on the findings obtained after analysing all the information collected, the following steps are recommended:

- Developing the following modules (by order of relevance to the interviewees in the sample): **social media marketing, web design, front end and back end development, content creation and mobile application development with Flutter;**
- Assessing the **technical level** of the teachers at the vocational training centres;
- Keeping a line of budget to **finance the training** (including incentives for teachers) and the material needed (mainly the software to teach digital skills);
- Creating a **job-matching platform** bringing together the stakeholders of the sector (companies, training centres, jobseekers), to provide several services, including job-matching to facilitate the job finding process for jobseekers and a feedback loop where employers would inform training providers about the usefulness of their courses.

1. INTRODUCTION

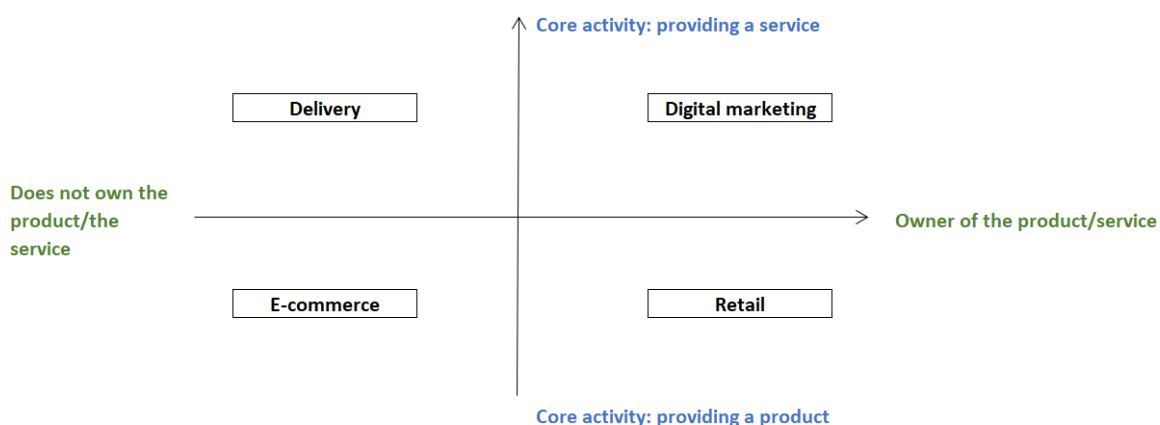
Altai was commissioned by the Danish Refugee Council (DRC) and VNG International to conduct this study called “Unlocking the power of the digital economy in KRI: A market study”, as part of the project “Improving resilience of host communities & refugees in Iraq”.

There are two phases for this study. Phase 1, presented in this report, is a market research on the digital economy in order to analyse the market size and its potential growth, potential employment and the digital skills needed by employers. Phase 2, which will start after concluding this report, aims to design curriculum material to teach digital skills at the public vocational training centres based on the findings of phase 1. During both phases, the work is in coordination and with the support of MoLSA.

In order to have a better understanding of the dynamics of the digital economy, the partners agreed to **limit this study to four major sectors** which could present potential for employment creation:

- Information technology (IT) and digital marketing: companies that develop websites, mobile applications, software and digital marketing campaigns (among others);
- Delivery: delivery and shipping of products and services from the local market or from abroad;
- Retail: shops/supermarkets that have both physical points of sale and online points of sale;
- E-commerce: online platforms that sell a product or a service (with no physical point of sale).

Figure 1: Market positioning of the four subsectors studied



2. METHODOLOGY

Key Takeaways

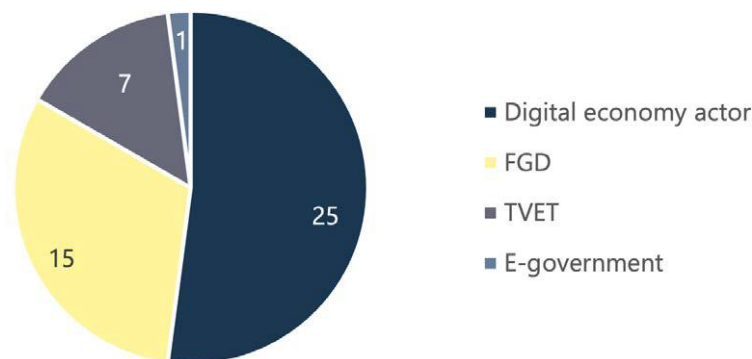
Thirty-three interviews and three focus group discussions were conducted overall:

- Twenty-five enterprises from diverse sectors of the digital economy (delivery, digital marketing, retail and e-commerce)
- One interview with the Directorate of Labour and Social Security at the Ministry of Labour and Social Affairs (MoLSA)
- Four public and two private vocational training centres
- Three focus group discussions (FGD), complemented with two individual interviews with the same profile
- One interview for e-government

2.1. Overview

Thirty-three interviews were conducted with the different stakeholders of the digital economy in KRI and three FGD with 15 participants working or looking for a job in the digital economy.

Chart 1: Distribution of interviews and FGD



2.2. Digital enterprises

Twenty-five enterprises in the digital economy were interviewed and are distributed as follows:

Chart 2: Distribution of interviews with enterprises in the digital economy

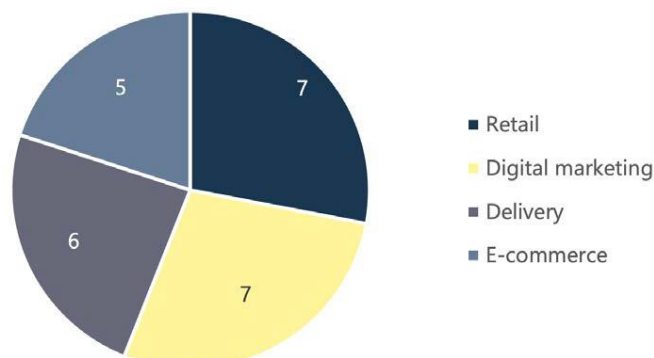


Table 1: List of interviewees

Sub-sector	Core business	Location
Delivery	Food delivery from restaurants	Erbil
Delivery	Food delivery from restaurants	Erbil
Delivery	Delivery of products from abroad	Erbil
Delivery	Delivery of products from abroad	Erbil
Delivery	Delivery of products abroad	Erbil
Delivery	Supermarket delivery	Erbil
Digital marketing	Digital marketing	Sulaymaniyah
Digital marketing	Web and app development, digital marketing	Erbil
Digital marketing	Web and app development, digital marketing	Erbil
Digital marketing	Web and app development, digital marketing	Erbil
Digital marketing	Web and app development, digital marketing	Erbil
Digital marketing	Web and app development, digital marketing	Erbil
Digital marketing	Web and app development	Erbil
E-commerce	General e-commerce platform	Erbil
E-commerce	Babysitting matching platform	Sulaymaniyah
E-commerce	General e-commerce platform	Erbil
E-commerce	Platform to buy handmade products in KRI	Erbil
E-commerce	Real estate platform	Erbil
Retail	Supermarket delivery	Erbil
Retail	Supermarket delivery	Erbil
Retail	Clothes retailer	Erbil
Retail	Candle retailer	Erbil
Retail	Beauty products retailer	Erbil
Retail	Supermarket delivery	Erbil
Retail	Supermarket delivery	Erbil

During interviews, a list of digital skills prepared by Re:Coded¹ was shown to the interviewees so they could indicate which digital skills they are looking for. The results of this grid of digital skills is aggregated and analysed in section 8 of this report (Skills needed to work in the digital economy).

Only one supermarket was not asked to complete this form because they do not use a digital platform yet (only WhatsApp/Viber). The answers of those responsible for the transition towards e-governance are included in the data analysis.

2.3. Vocational training centres

During the data collection, four public vocational training centres were visited:

- Two Vocational Trainings in Erbil
- One Vocational Training Centre in Duhok
- One Vocational Training Centre in Sulaymaniyah.

Two private vocational training centres were also interviewed in Erbil.

The director or vice-director of each public vocational training centre was interviewed, followed by a quick visit to the centre.

¹ Re:Coded offers free coding bootcamps and digital skills training to local and conflict-affected youths in Iraq.

2.4. Focus group discussions

Three FGD were organised as well as two individual interviews to complement the FGD. In total, 15 discussants participated.

Participants were selected through the contacts of the enterprises which were interviewed and through Rwanga Foundation (a local charity). The main criteria was that they either studied a subject related to digital skills or if they were working in a position that required digital skills. Participants were 25 years old on average and mostly from Erbil. There were around 60% men and 40% women. One woman is an IDP from Baghdad and three men are from Syria.

During these FGD, discussants were asked to undertake a self-assessment of their digital skills. These same skills were presented to the enterprises. In addition, we asked them to indicate their interest in learning these specific digital skills.

Table 2: Profile of FGD participants

Participant	Age	Gender	Local/refugee/IDP	Degree	Employment status
1	23	Male	Local	BS in computer engineering – Tishk International University – Erbil	Working in digital marketing
2	18	Male	Local	Computer – Amal Private Institute – Erbil	Student
3	25	Female	Local	Computer sciences/engineering – Tishk International University) – Erbil	Working in IT department at a hospital
4	26	Male	Local	Computer – National Technical Institute (private TVET) – Erbil	Working at the airport with tasks unrelated to IT
5	32	Male	Local	Computer – National Technical Institute (private TVET) – Erbil	Looking for a job
6	26	Female	Local	IT – Erbil Polytechnic University – Erbil	Working at the Ministry of Electricity – KRG
7	32	Female	IDP from Baghdad (has lived in Erbil for 13 years)	IT – Chouefat University – Erbil	Working in IT at a hospital
8	21	Female	Local	IT – Salahaddin University – Erbil	Looking for a job
9	22	Male	Local	IT – Soran University – Soran	Looking for a job
10	21	Male	Local	IT – Salahaddin University – Erbil	Student doing an internship
11	23	Female	Local	Software engineering – Salahaddin University – Erbil	Working as an IT assistant in a governmental office
12	25	Male	Syria (in KRI since 3 years)	Geography – University of Sweida, Syria	Working as an electrician while waiting to find a job in IT/digital economy
13	23	Female	Local	Software engineering – Salahaddin University – Erbil	Looking for a job
14	25	Male	Syria (in KRI for 5.5 years)	Diploma in IT – Noble Institute – Erbil	Looking for a job
15	32	Male	Syria (in Erbil since 1 month)	Mechanical engineering – University of Damascus – Damascus, Syria	Looking for a job

2.5. E-government

Digitisation of public services is not within the scope of this study. However, one interview was conducted about the transition towards e-government mainly to understand the timeline, goals and potential employment creation by e-governance. The interview took place with the Director of Information Management at the Kurdistan Regional Government.

Since the potential employment creation seemed limited, no further interviews were scheduled.

2.6. Market shares

To extrapolate data, the market share of interviewees from each sector was estimated (number of companies interviewed versus total estimated number of companies in the subsector). These estimates were used for the market sizing, expected revenue growth and potential employment creation.

Table 3: Market share estimates of interviewees

	Estimated market share	Rationale
Delivery	18%	<ul style="list-style-type: none"> Food delivery: there seems to be a limited number of actors. Delivery of products from abroad: there seems to be a high number of small and very small actors. Eighteen competitors were cited during the interviews. It is estimated there are 10 other actors of equivalent size to the interviewees. <p>→ 6 interviewees compared to around 34 actors in total</p>
Digital marketing	35%	<ul style="list-style-type: none"> Seven major competitors were cited by interviewees. A quick desk review shows there are many small actors in the three main urban centres. It is assumed that the main agencies were covered during the interviews since most of the interviewees cited almost the same competitors. The other agencies must therefore be smaller or less known. The total number of actors is rounded up to 20. <p>→ 7 interviewees compared to 20 actors in total</p>
E-commerce	18%	<ul style="list-style-type: none"> Four competitors were cited. However, interviewees may not know all the actors. They might only know the ones working with the same category of products. There are a few other medium-sized Kurdish actors³. Some specialise in one category of product only (for example, cars). There are many other smaller actors, which can be social media pages only without a proper website. The biggest e-commerce platforms⁴ in Iraq do not seem to be Kurdish⁵, except for Bazaryonline (ranked sixth in terms of numbers of fans on their Facebook page). Most actors seem to be from other regions in Iraq. In addition to the four competitors cited, it is estimated there are 20 more. <p>→ 5 interviewees compared to 28 actors in total</p>
Retail	35%	<ul style="list-style-type: none"> Three other supermarkets on Lezzoo. No competitors cited in the interviews. The number of actors is rounded up to 20. <p>→ 7 interviewees compared to 20 actors in total</p>

These market shares were estimated based on the number of interviewees compared to the number of competitors. The competitors were estimated based on what the interviewees mentioned as well as basic desk research.

² Number of actors interviews / estimated total number of actors in the subsector

³ <https://import-export.societegenerale.fr/en/country/iraq/e-commerce>

⁴ Ranked according to the number of fans on their Facebook page.

⁵ <https://www.socialbakers.com/statistics/facebook/pages/total/iraq/brands/e-commerce>

2.7. Challenges and limitations

2.7.1. Challenges

One of the most challenging issues during fieldwork was to obtain interviews with the large actors of the digital economy. It took a few weeks to get an answer from one of the largest food delivery mobile applications while no answer was received from a major platform for taxis.

Another challenge was to identify Syrians to participate in the FGDs, because there seems to be a limited number of Syrians working in this sector.

2.7.2. Limitations

Many enterprises did not have precise data about their revenue, future recruitment and other financial indicators. Interviewees specified that the data they were sharing was approximate. Since, in addition to that, the interviewees are not a representative sample, the estimates in this study should be treated as general trends and not precise data.

Two main biases were identified in this market study. Firstly, most enterprises interviewed and almost all FGD participants are based in Erbil. Secondly, few women in enterprises were interviewed. However, these biases also reflect realities of the sector, which is both concentrated in Erbil and with less women than men.

3. LEGISLATIVE FRAMEWORK OF THE DIGITALECONOMYINKRI

Key Takeaways

- Interviewees report that company registration is a lengthy and costly process.
- The current legislative framework could better protect enterprises in the digital economy, mainly by better protecting their intellectual property and by protecting them against customers who cancel orders too late.
- Digital literacy remains a barrier for large numbers of customers in KRI. This in turn slows down the development of the digital economy.
- Most enterprises seem to have no problems with dealing in cash, but they would benefit from online payments in order to protect themselves from clients who cancel late, for example.

This section examines various environment-related barriers in order to identify appropriate recommendations to support current digital enterprises and encourage technology entrepreneurship.

3.1. Legislative framework and challenges

3.1.1. Company registration

Table 6 shows the governmental departments involved in registering enterprises of the digital economy. As shown in the table, the number of governmental departments ranges from three to six. Some interviewees reported that they found this process long (one to two months) and could be organised in a more efficient way. Additionally, interviewees reported that the cost for registration is between 3,000 to 4,000 USD. Most interviewees had lawyers handling the registration process.

Table 4: Governmental departments involved in registering enterprises of the digital economy

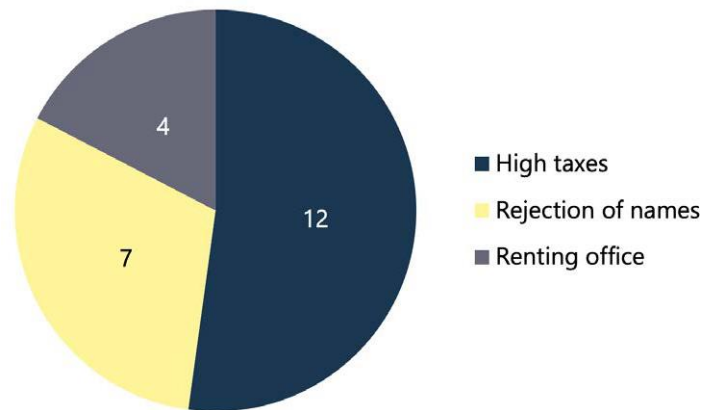
Delivery	Digital Marketing	E-commerce	Retail
Chamber of commerce	Chamber of commerce	Chamber of commerce	Chamber of commerce
Company registration directorate	Company registration directorate	Company registration directorate	Company registration directorate
Tax office	Tax office	Tax office	Tax office
Security (<i>Asayesh</i>)			Security (<i>Asayesh</i>)
			Municipality
			General directorate of Health

In addition to the high cost, interviewees cited three main barriers which hinder enterprise registration (shown in Chart 2: Barriers to registering enterprises). These barriers, from most hindering to least hindering, are **(i) high taxes, (ii) rejection of names and (iii) renting an office space.**

Interviewees from all sectors reported that they find taxes too high, especially because of the base for calculating taxes is not always clear to them. For instance, a supermarket mentioned that taxes

are based on the surface of the shop rather than sales. Since enterprises of the digital economy do not always have a shop (such as e-commerce enterprises) whose surface can be used as a basis for taxation, it seems that these enterprises understand even less how their taxes are calculated.

Chart 3: Barriers to registering enterprises



Interviewees, especially from the e-commerce sector, reported frustration with registering the names of the enterprise they are creating. Their responses suggest that there are no clear rules about which names can or cannot be accepted. This in turn has been leading entrepreneurs to submitting different names until reaching name approval.

In addition, start-ups in the digital economy do not always need an office space. Some can work from home or without an official office initially. However, it seems to be a legal requirement for officially registered enterprises to have an office address. According to interviewees, this requirement has not adapted to start-ups in the digital economy.

3.1.2. Existing legislative framework

Based on the interviews, this study revealed four groups of barriers related to the legislative framework of Iraqi Kurdistan (visualised in Figure 2).

Specific laws that are necessary to develop the digital economy are not included in the **legislative framework**, such as laws to regulate the online behaviour of customers. The current legislative framework does not provide enough protection to enterprises against fake orders and late cancellations. Two interviewees from the e-commerce sector explicitly reported that they incurred financial losses due to fake orders and late cancellations. Furthermore, the legislative framework does not include the protection of intellectual property that results from the application of creativity and technical skills.

The second group of legislative barriers relates **to international and national customs**. Delivery enterprises seem to struggle with customs not only when importing products through borders, but also when shipping products between cities. On the Iraqi-Turkish border, i.e. at the Ibrahim Khaleel border post, the inspection of imported products leads to damaged products and losses by delivery companies. For national shipping, customs charges are sometimes charged when shipping from north to south of Iraq. Furthermore, checkpoints between cities may inspect shipped products in a way deemed inadequate by enterprises, for example, by damaging the products sometimes.

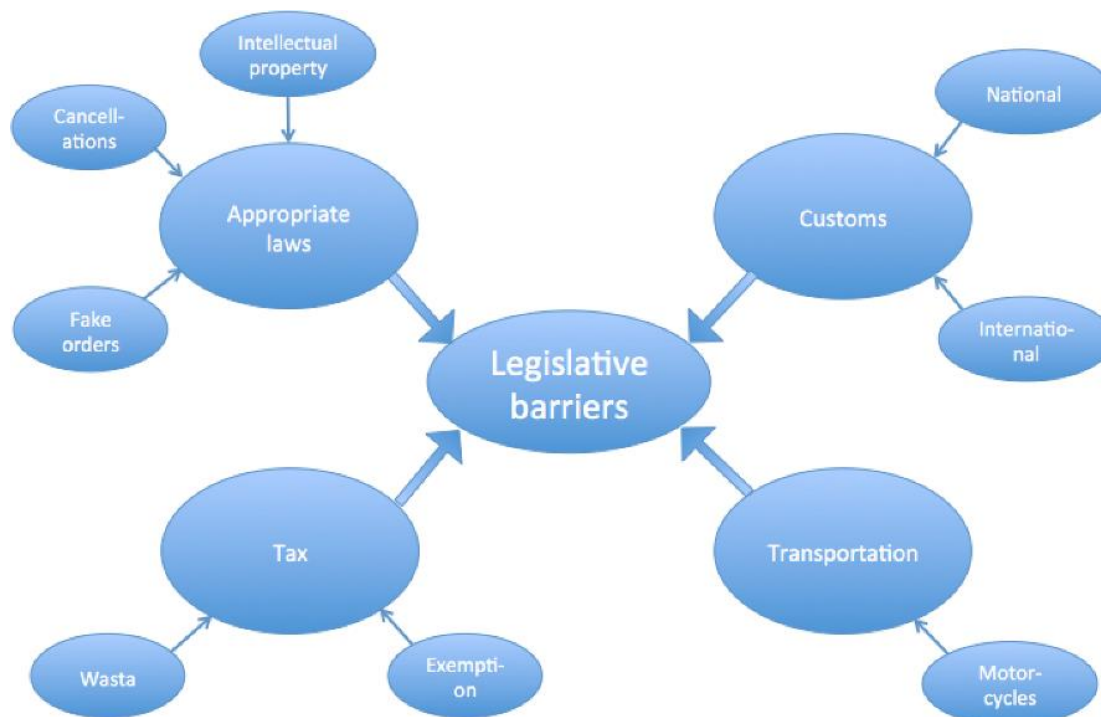
Third, the legislative framework imposes **transportation barriers**. Local food delivery companies use motorcycles. However, the KRG banned the import of motorcycles since 2012. Thus, traffic police

frequently confiscate motorcycles which entered illegally since 2012 and which are not officially registered⁶. This leaves drivers and their employers with no affordable means of transportation.

Fourth, the **current taxation system** was reported as a strong barrier. Nine interviewees explicitly mentioned that providing tax exemptions would motivate entrepreneurship. This falls in line with results reported in section 3.1.1 regarding the hindering effect of tax on registering enterprises. It has been reported by interviewees that there is also *wasta* (influence of personal connections) in the taxation process, which leads to inconsistencies in taxes enforced on enterprises and provokes frustrations.

According to interviewees, **expansion into the rest of Iraq is legally challenging** because of the differences between the legislative framework of Iraqi Kurdistan and of federal Iraq. To expand to Iraq an enterprise needs to register in Baghdad, which takes a minimum of eight months (one interviewee even reported a duration of 14 months). Also, there is no tax exemption for enterprises operating in both Iraqi Kurdistan and Iraq, meaning that these enterprises are required to pay taxes to both the Kurdistan Regional Government (KRG) and the central government of Iraq.

Figure 2: Barriers of legislative framework



3.1.3. Financial & technical support

According to interviewees, they would need more financial and technical support for the development of their enterprises, such as:

- Investment in digital enterprises: Enterprises need investment, ranging from 8 to 20K USD, to grow and expand. However, investment does not seem to be accessible. Among the interviewees, only one of the largest food delivery applications was able to secure investment from a US-based seed start-up accelerator. It was also reported that local investors are not especially keen on investing in the digital economy.

⁶ <https://www.rudaw.net/english/lifestyle/09092020>

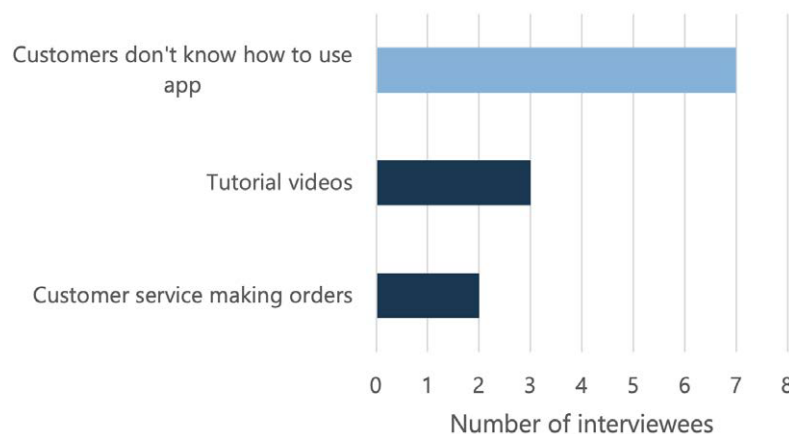
- Bank loans: None of the enterprises considered taking bank loans, either because they do not know it is possible to take a loan or because of the difficult conditions of loans (in general, banks demand very large collaterals on real estate, and personal guarantor, “*kafeel*”, which makes credit difficult to access for small enterprises in general, not just digital companies).
- Technical support: In addition to investment, enterprises expressed the need for technical support, especially in the form of digital marketing and mobile application development training.

3.2. Digital literacy & culture

3.2.1. Customer digital literacy

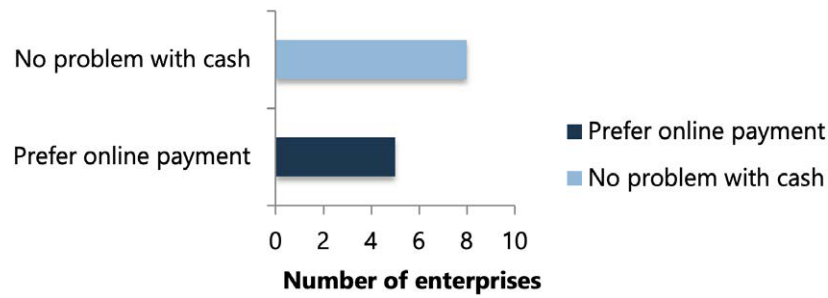
While the digital economy of Iraqi Kurdistan seems to be growing, **digital literacy remains a barrier** for many customers. These customers – often older and/or not living in the main urban centres – do not always know how to place an order on an e-commerce application, for example. Enterprises, especially from the e-commerce sector, aim to overcome this barrier in two ways: first, by enabling customers to make purchase orders through calling customer service; second, by uploading tutorial videos and providing instruction materials to customers.

Chart 4: Digital literacy barrier (yellow) and solutions (green)



3.2.2. Trust & cash-based economy

Contrary to expectations, a large number of enterprises seem to have no problems with **dealing in cash**. In fact, it was suggested that cash on delivery helps overcome the customer trust barrier, because customers are not taking any risks when making purchase orders. For example, a cloth retailer mentioned “customers don’t have to trust me much, they don’t pay until they receive products”. However, cash-based transactions increase the vulnerability of vendors to fake orders and late cancellations, especially in an environment that lacks necessary laws.

Chart 5: Dealing with the cash economy

3.2.3. Delivery & postal address

This study reports mixed findings regarding the lack of postal addresses in Iraqi Kurdistan. Some enterprises reported difficulties in delivering goods because they could not identify the exact location of customers and lacked knowledge of landmarks near customers. In contrast, enterprises that outsourced the delivery process to specialised companies did not seem to struggle, but this is perhaps because they are simply not aware of the difficulties of identifying locations without postal addresses. Thus, it would be rather accurate, based on the evidence at hand, to suggest that implementing a postal address system could lead to more effective and efficient delivery processes.

4. THE CURRENT LANDSCAPE OF THE DIGITAL ECONOMY IN KRI

Key Takeaways

- The study estimates that there are around 130,000 digital economy users in KRI.
- The digital economy sector is estimated to generate between 15 and 20 million USD of annual revenue (representing between 0.06% and 0.09% of GDP).
- The typical portrait of a company founder in the digital economy is a young Iraqi Kurdish man (25 to 40 years old, on average).
- According to respondents, most digital economy users are young (mostly between 16 and 30), both male and female and living in urban centres.
- Most employees working in the digital economy are young (mostly between 20 to 30 – sometimes up to 40). In the interviewee sample, 6.8% of employees are women while 7.8% are refugees, non-Iraqis and IDPs.

4.1. Marketsizing

4.1.1. Estimate of the population size using digitised services

One interviewee from the e-commerce sector who has been working in the digital economy for many years estimates that around 5% of the population in KRI uses digital services. This estimate is applied to the population above 15 (see 4.3 Digital economy user profile) and to the people living in the big urban areas – Erbil, Duhok, Sulaymaniyah (see 4.3 Digital economy user profile):

Table 5: Estimate of the population size using digitised services

	Population above 15 (%)	Urban Population (2014)	Population above 15	Digital economy users (%)	Digital economy users
Erbil	60%	1,463,333	882,390	5%	44,119
Sulaymaniyah	68%	1,740,496	1,183,537	5%	59,177
Duhok	63%	987,037	617,885	5%	30,894
Total		4,190,866	2,683,812		134,191

Comparing this estimate to the number of users of the well-known mobile applications (25,000 active users for one e-commerce actor and more than 50,000 downloads for the major food delivery actor, for example), this estimate sounds reasonable.

4.1.2. Estimate of the share of the digital economy in the GDP

Due to the lack of proper statistics, it is very difficult to estimate this share. Two different methods were applied to estimate the market share of the digital economy. These methods lead to estimations relatively close to each other.

- Method 1: Based on GDP of wholesale and retail

⁷ IOM, July 2018, Demographic Survey, Kurdistan Region of Iraq.

⁸ IOM, July 2018, Demographic Survey, Kurdistan Region of Iraq.

Two large retailers estimated that online sales represented around 1% of their total sales. This percentage is applied to the GDP of wholesale and retail trade in KRI in order to estimate the share of the digital economy in the GDP.

Table 6: Estimate of the share of the digital economy in the GDP (Method 1)

	Iraqi Dinar (IQD)	USD
GDP of wholesale and retail trade (2015)⁹	2,449,000,000,000	1,975,000,000
Proportion of firms in retail (2015)¹⁰, as opposed to wholesale	76%	76%
GDP of retail trade	1,861,240,000,000	1,501,000,000
Qualitative estimate	1%	1%
Resulted computed size of digital sales	18,612,400,000	15,010,000
Population using digital economy	134,191	134,191
Spending per user per year	138,701	112

This method would thus lead to a 0.06% share of the digital economy in total GDP (2015)¹¹.

- Method 2: Based on the revenue declared by the interviewees

We extrapolated the market size of each interviewee to estimate the size of the whole sector.

Table 7: Estimate of the share of the digital economy in the GDP (Method 2)

	Estimated revenue of interviewees per year (USD)	Share of interviewees compared to the total digitised market	Extrapolated revenue (USD)
Digital marketing	1,777,500	35%	5,078,571
E-commerce	678,510	18%	3,799,653
Retail	1,726,375	35%	4,932,499
Delivery	2,631,850	18%	6,759,693 ¹⁴
Total	6,814,234		20,570,417

This method would thus lead to a 0.09% share of the digital economy in total GDP (2015).

9 Rand Corporation, Kurdistan Regional Government Ministry of Planning, 2016, Calculating the Gross Regional Product of the Kurdistan Region – Iraq.

10 Rand Corporation, Kurdistan Regional Government Ministry of Planning, 2016, Calculating the Gross Regional Product of the Kurdistan Region – Iraq.

11 Latest available figures concerning the GDP in KRI.
In order to stay consistent, the share of the digital economy in the GDP was estimated based on the total GDP from the same year as the GDP used in the calculations in the table above.

12 Based on the expectations of interviewees.

13 See 2.6 Market shares.

14 We extrapolated without including Lezzoo's revenue because it is an exceptional actor in the digital economy in KRI.

4.2. Founderprofile

Based on the profile of founders, a typical portrait was identified: a young man (25 to 40 years old, on average) who is Iraqi Kurdish.

- **Eighty per cent of the founders are male.** The other 20% are women: two enterprises in the digital marketing sector with a team of 8 to 10 employees; and three small diverse start-ups with one to three employees including the female founder.
- **Eighty-four per cent of the founders are Iraqi Kurdish.**

Only one enterprise was founded by Syrians. However, this enterprise was first founded in Syria and then opened a branch in Erbil alongside other locations in the Middle East. They are the largest IT enterprise among interviewees, with 35 employees in Erbil. Most employees are Syrian (see 4.5.2 Refugees, non-Iraqis and IDPs). They communicate in English and/or Arabic with their clients and it seems to be working for them, as they have a very large base of clients.

The reason why there are very few non-Iraqi Kurdish establishing new businesses in KRI could be related to the fact that they might not have the capital or the local network to do so. Respondents did not mention any legal barrier for non-Iraqis.

As for the three other enterprises not founded by Iraqi Kurdish, one was founded by a Turkmen living in KRI (cloth retailer); one was founded by an IDP from Baghdad (supermarket delivery application) and one was founded in Basra (major e-commerce actor).

4.3. Digital economy userprofile

Based on the respondents' description of their client base¹⁵, digital users in KRI seem rather **young** (between 16 and 30, on average). However, the age of users can go up to 80 in certain cases, usually for users of supermarket delivery applications.

Users are a **mix of male and female** depending on the services offered. Female users seem, however, to be slightly more dominant than male users according to some interviewees.

Most users seem to live in KRI's big **urban centres** (Erbil, Duhok, Sulaymaniyah).

4.4. Employees: Profile, recruitment process and salary

4.4.1. Team composition

Around a third of employees (including founders and freelancers) in the digital economy sector have positions requiring digital skills.

¹⁵ As mentioned in the limits of this study's methodology (see section 2.7.2), interviewees did not have precise data about their users. The data they shared was mostly based on their own perceptions.

Table 8: Average team composition in the digital economy

	Average total employees	Positions requiring digital skills	% Digital skill positions/ Total employees
Delivery	33.2	7.3	47.8%
Digital marketing	15.8	15.5	96.4%
E-commerce	7.4	4.0	78.5%
Retail	45.3	3.0	20.1%
General average	25.8	7.9	30.8%

4.4.2. Profile of employees

Most employees working in the digital economy are **young** (mostly between 20 to 30 years old – sometimes up to 40). Women make up 6.8% of employees (see 4.5.1 Women for more details) while 7.8% are refugees, non-Iraqis and IDPs (see 4.5.2 Refugees, non-Iraqis and IDPs for more details).

Most of those who have jobs that require digital skills are **university graduates** who mostly graduated in IT/computer engineering/science engineering. Employees having graduated from a vocational training centre (public or private) were extremely rare among the enterprises interviewed.

4.4.3. Recruitment process

Based on the interviews and on the FGD, there seems to be **no dedicated platform for employment in the digital economy** but there are many other general platforms posting such employment opportunities, such as Facebook groups (*Find jobs in Kurdistan*), Facebook job platform, Rwanga Foundation website, LinkedIn, the websites of non-governmental organisations (NGO), Viber groups, the Mselect platform, social media and websites of companies, etc. However, as mentioned above, many FGD participants find that the personal network plays a significant role in finding a job in this area (although this insight was not unanimously shared). Headhunting services seem to be almost never used.

The number of CVs received varies greatly between companies. Generally, the number of CVs that are compatible with the job requirements are very low.

During job interviews, technical questions are posed, such as programming-related ones. Some employers – especially in IT and digital marketing – may test new employees during the first few months by giving him/her a project. Language skills (especially English) may also be tested during the interview.

4.4.4. Type of contract

All employees seem to have a typical **full-time employment contract** which is renewable every year.

Part-time employment and freelancing were extremely rare among respondents. When it was the case, it was mainly demanded by the employee for personal reasons.

4.4.5. Salary

The **average salary per month is 876 USD**. This represents around 2.5 times more than the average monthly income per capita in Iraq¹⁶.

¹⁶ <https://data.worldbank.org/indicator/NY.ADJ.NNTY.PC.CD?locations=IQ>

Table 9: Monthly salary of employees in the digital economy in KRI (in USD)

	Average monthly salary	Minimum monthly salary	Maximum monthly salary
Delivery	950	633	1,567
Digital marketing	979	607	1,350
E-commerce	550	550	700
Retail	870	400	N/A
General average	876	589	1,291

Salaries in e-commerce could be lower than the rest of the sectors because there is a higher number of less technically skilled employees, such as call centre work and data entry.

FGD participants believe they should be earning around 600/700 USD at least.

4.5. Participation of women, refugees and IDPs in the digital economy

4.5.1. Women

- Employment of women in the digital economy

Generally, there are few women working in the digital economy. They represent, on average, **6.8%** of total employees in the interviewee sample. Some enterprises do not employ any women while others employ women only. The IT sector rarely employs women while start-ups founded by women tend to recruit women (two start-ups among the interviewees).

The positions of women varies, but they are mainly at call centres, in customer relationship management, digital marketing, web design, finance and administration or CEOs (when they are the founder of the enterprise).

- Employer perception

Half of the interviewees (52%) have shown in their answers during the interview that they considered that certain skills are gender specific. According to these interviewees, certain positions are more suitable to one gender compared to the other. For example, they consider that women have special attributes which make them better suited or less suited for certain types of jobs. The other half of interviewees do not have any gender preference for certain positions. They base their recruitment process entirely on the skills of the candidates.

According to the interviews, women are often viewed as less suited than men, especially by web developers. This is based on web developers' perception that women may not have the relevant technical and logical reasoning skills which are relevant for development.

Other employers specifically recruit women for certain positions, typically for sales and call centres because people in KRI are more familiar with female voices on the phone.

“We do not think that women are good in this type of skills, because development needs logical and rational skills. Women are most likely to be emotional. Development also needs patience, and women are not patient.”

– An IT and digital marketing company

Also, based on the interviews, some employers perceive women as more detail oriented. This is why some employers find women well-suited for jobs in digital marketing and data entry.

- Self-perception of women in the digital economy

Despite the gender-based perception of skills by employers, female participants in the FGD did not mention any gender-related challenges during the recruitment process. Women did not feel discriminated against due to their gender during job interviews.

This discrepancy could be explained by many factors, such as self-censorship by women who do not apply for technical positions either because they did not study it or because they believe they will not be selected for an interview. Another explanation could be simply because women were not selected for an interview by employers with a gender-based perception of skills. Also, this could be due to the small size of the FGD.

4.5.2. Refugees, non-Iraqis and IDPs

- Refugee, non-Iraqi and IDP employment in the digital economy

Just like women, refugees, non-Iraqis and IDPs are not highly represented in the digital economy workforce. They represent 7.8% of total employees in the interviewee sample. However, the range is very large: some interviewees had no refugee, non-Iraqi or IDP employees while an IT company founded by Syrians employs almost only Syrians.

Their positions vary, but they are mainly in web or app development, digital marketing, graphic design, data entry, administration, accounting and finance.

- Employer perception

Thirty-six per cent of interviewees employ refugees and/or non-Iraqis (mostly Syrians) and/or IDPs.

Among the enterprises which do not employ any of them, only two made a deliberate choice not to recruit them. For the others, it is just a matter of circumstances, but they would not mind recruiting a refugee and/or non-Iraqi (mostly Syrians) and/or an IDP if his/her skills match with the job requirements.

According to the interviews, women are often viewed as less suited than men, especially by web developers. This is based on web developers' perception that women may not have the relevant technical and logical reasoning skills which are relevant for development.

Other employers specifically recruit women for certain positions, typically for sales and call centres because people in KRI are more familiar with female voices on the phone.

“He was one of the best graphic designers. He had very little experience when he started. He was very excited and developed his skills through online videos and on the job training. I admire his evolution.”

– An – A digital marketing company

Two enterprises want to employ locals only for different reasons. The first one, a supermarket, says this is because one cannot know how long a refugee, non-Iraqi or IDP will stay. The supermarket wants to recruit employees who will stay with them for the long term.

As for the second enterprise, the CEO wants his employment opportunities to benefit locals only. However, he will likely consider recruiting Syrians and Lebanese employees to help the mobile application integrate more Syrian and Lebanese restaurants to his platform.

Overall, according to the interviewees, Syrians are perceived to be smart, hard workers and were often cited as among the top employees.

- Self-perception of refugees, non-Iraqis and IDPs in the digital economy

During the FGD, only one Syrian out of three studied IT in Erbil. The other two studied in Syria but they would not mind undergoing training to enhance their digital skills.

Refugees, non-Iraqis and IDPs face a few specific barriers, **the most difficult one being the Kurdish language barrier**. Most refugees and IDPs do not speak Kurdish (Sorani or Badini) when they settle down in KRI (Kurdish Syrians speak Kurmandji). Syrian participants and the IDP from Baghdad in the FGD stressed that this issue was a strong barrier to finding a job in KRI, whether in the digital economy or another sector.

Another obstacle faced by Syrians and IDPs is their network. During the FGD, many participants – not only Syrians – explained that having a good network in KRI is important to obtain a good job, especially in the IT and digital economy (although this is not exclusive to this sector only). However, this issue is more acute for Syrians and IDPs who start with no or a small network when they arrive.

- Legal framework for refugee, non-Iraqi and IDP recruitment

According to employers and FGD participants, there seems to be **no additional legal requirements** for refugees, non-Iraqis or IDPs to work in the digital economy in KRI, apart from having legal documentation.

4.6. E-government

The KRG has committed to transitioning to e-government¹⁷. One of the objectives is to create e-processes and to create one portal for all ministries. For now, the KRG has a small team working on this project. They are aware that the digitisation of public services is going to take a very long time, maybe around a decade.

However, at this stage it does not seem that e-transitioning will generate many employment opportunities. Iraq in general, and KRI in particular, are already in financial crisis and struggle to pay the salaries of their civil servants and are therefore not keen to further expand public employment. As a general fact in other countries, there would probably be sub-contracting opportunities for digital service providers, but with the e-government plans still being at an early stage, it is difficult to quantify those.

The KRG plans to open call centres in the future to help people who are having trouble using their e-services.

¹⁷ Brand Kurdistan, Kurdistan Going Digital, July 2020, <https://brandkri.com/kurdistan-going-digital/>

5. THE POTENTIAL OF THE DIGITAL ECONOMY FOR EMPLOYMENT AND GDP GROWTH

Key Takeaways

- In an optimistic scenario, it is estimated that digital economy could grow by up to around 60% over the next two years.
- In the short term, the highest area of recruitment would be in digital marketing, data entry and web development.
- The digital economy sector could create 750 new jobs. Among those, 450 positions would require digital skills.
- Each sector this study examined presents different processes to digitise and different motives.
- A cost-effectiveness analysis on the digitisation of the retail sector (supermarkets) shows that adopting digital technologies is a profitable investment which can be paid off usually in less than two years. However, despite this quick investment pay-back period, the digitisation of supermarkets does not create a high number of employment positions (4.3 new employees requiring digital skills per supermarket).

5.1. The potential of the digital economy for GDP growth

Based on each interviewee's own growth expectation, the growth of the digital economy sector in KRI was extrapolated.

Table 10: Expected revenue growth of the digital economy

	Share in the GDP (USD)	Expected future revenue of interviewees per year (USD)	Share of interviewees compared to the total market	Extrapolated expected revenue growth (USD)	Growth (%)
Digital marketing	5,078,571	2,185,500	35%	6,244,286	23.0%
E-commerce	3,799,653	748,220	18%	4,190,035	10.3%
Retail	4,932,499	1,824,477	35%	5,212,790	5.7%
Delivery	6,759,693	2,985,954	18%	16,920,408	150.3%
Total	20,570,417	7,744,151		32,567,518	58.3%

The market size of the digital economy in KRI is still very small but it seems to be growing very rapidly with an expected growth of up to 60%.

The estimated expected growth over the next few years is, however, very optimistic because it is based on the expectations of interviewees. Some of them are competing against each other and set a growth strategy in order to become the market leader. It appears therefore highly unlikely that all actors can achieve these expectations.

18 See 4.1.2 Estimate of the share of the digital economy in the GDP.

19 Based on the expectations of interviewees.

20 See 2.6 Market shares.

21 Extrapolation based on the expected revenue of interviewees and their estimated market share.

5.2. The potential of the digital economy for employment creation

5.2.1. Employment creation within the interviewee sample

As explained in the market sizing section of the report (section 4.1), the digital economy seems to be in its early stages of development in KRI. As a result, the digital economy is creating new employment positions. So far, it does not seem like the digital economy is destroying or replacing current employment positions.

The reason behind this could be that, according to interviewees from the retail sector²², online activities are not replacing offline activities: there is still a high number of people in KRI using offline activities. Until the digital market matures and until many more people convert to online services, online and offline activities will highly likely cohabitate for a certain period. When the market matures, it is highly probable that the digital economy will start destroying or replacing current positions as seen in economies where the digital economy is at an advanced stage of development.

The average employment creation by interviewees is presented in the table below. According to interviewees' recruitment expectations, **digital teams could increase by up to around 60%**.

Based on the interviews, the recruitment of employees with digital skills could represent around a third of total minimum recruitments expected.

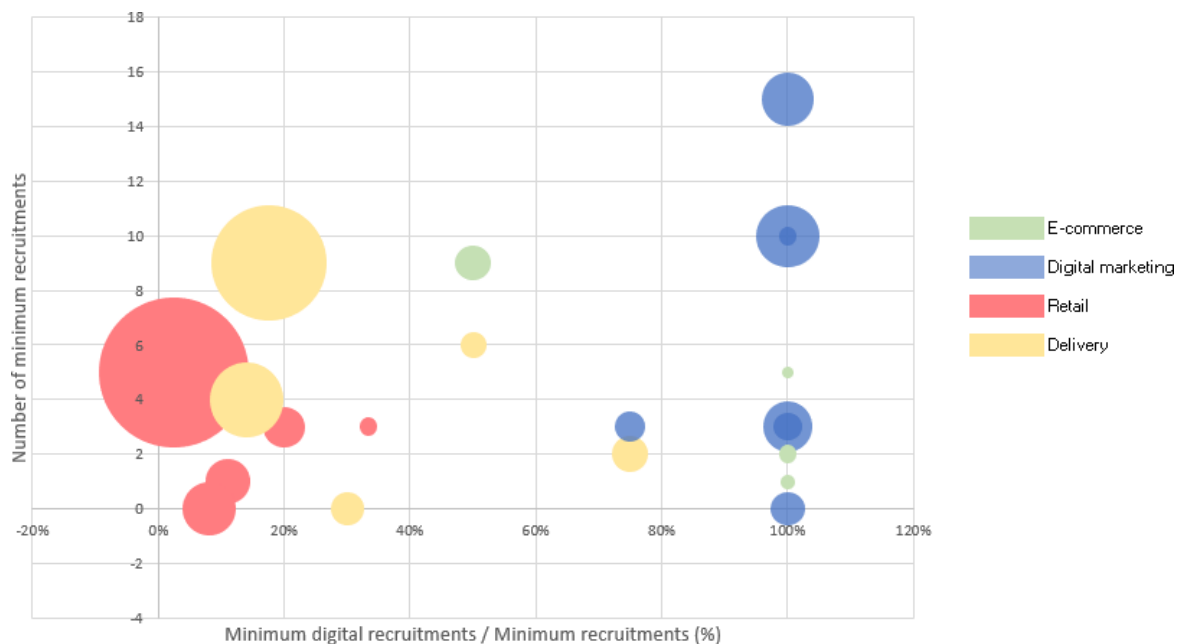
Table 11: Average employment creation in interviewee sample (Part 1)

	Total employees	Employees requiring digital skills	Minimum recruitment	Team increase (%)	Maximum recruitment	Minimum recruitment with digital skills	Increase in digital teams (%)	Minimum digital recruitment/ total minimum recruitment (%)
Delivery	33.2	7.3	4.6	66%	3.0	3.5	65%	79%
Digital marketing	15.8	15.5	7.3	74%	16.5	7.2	85%	94%
E-commerce	7.4	4.0	36.8	307%	11.5	4.8	105%	39%
Retail	45.3	3.0	17.3	184%	38.7	3.7	82%	74%
General	25.8	7.9	16.1	57%	19.3	4.8	58%	31%

In the following chart, the four sectors examined in this study are highlighted by colour while the size of the bubbles represents the current size of the team. The (x) axis represents the ratio of minimum digital recruitment compared to minimum total recruitment while the (y) axis represents the minimal recruitment numbers²³.

22 Interviewees from the retail sector are considered as the most relevant to understand the relation between online and offline demand since both types of demand are part of their business model (as opposed to interviewees in e-commerce or digital marketing, for example).

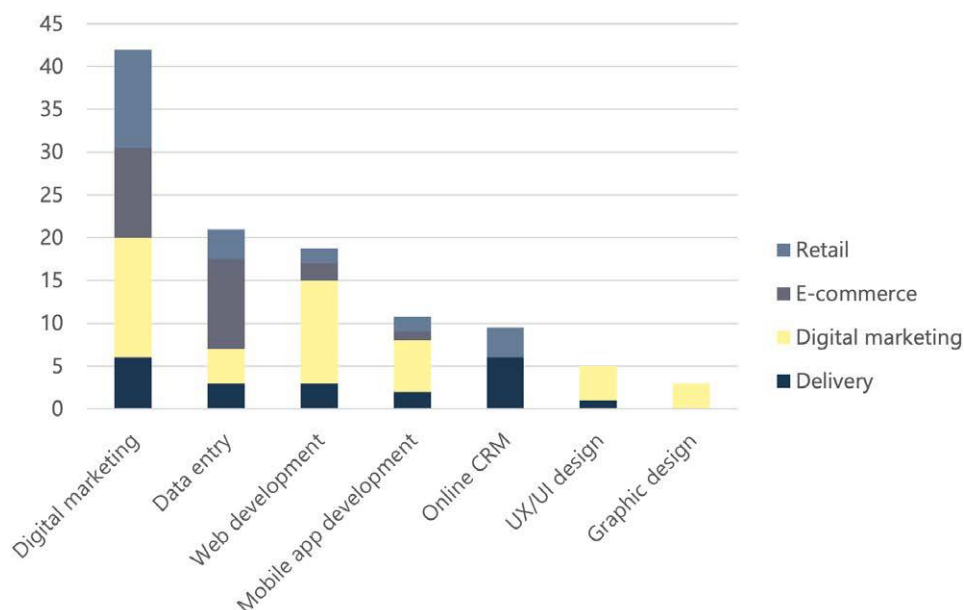
23 Three respondents were eliminated in this chart: two outliers from the retail and e-commerce sector and one retailer for which the data was incomplete.

Chart 6: Average employment creation in interviewee sample (Part 2)

Based on this graph representing the interviewees, it is observed that:

- Digital marketing has overall medium-sized teams where almost all the positions require digital skills. The expected minimum recruitment varies greatly between companies, mostly depending on future projects and the expansion strategy of the company.
- E-commerce has very small teams. Many actors are still at the start-up stage and are therefore still focusing on the development of their technology. This is why most of the team requires digital skills. The expected recruitment numbers are rather low.
- The size of teams in the retail sector is varied. Generally, they require little digital skills. The expected recruitments are rather low.
- Delivery is the most diverse sector: the number of expected employees is variable. Food delivery has lower needs for digital skills compared to product delivery. The size of the team is also bigger.

The chart below presents digital employment creation by category of job. In all sub-sectors, most recruitment concerns digital marketing opportunities (38.2%).

Chart 7: Detailed employment creation in the interviewee sample

5.2.2. Employment creation in the digital economy in KRI

Around 750 jobs are expected to be created. Among those, 440 would require digital skills (representing 58.7% of total expected new jobs).

Table 12: Potential employment creation of the digital economy in KRI

	Delivery	Digital marketing	E-commerce	Retail	Total
Interviewed employees	199	110.5	37	272	618.5
Interviewed employees with digital skills	44	108.5	20	18	190.5
Interviewed minimum recruits	23	44	35	104	351.0
Interviewed minimum recruits with digital skills	21	43	24	22	110.0
% estimate of enterprises interviewed/	18%	35%	18%	35%	
Total employees	1 127.7	315.7	207.2	777.1	2 427.7
Total employees with digital skills	249.3	310.0	112.0	51.4	722.8
Minimum recruits	130.3	125.7	196.0	297.1	749.2
Minimum recruits with digital skills	119.0	122.9	134.4	62.9	439.1

Compared to the total workforce in KRI, the share of employees in the digital economy seems to be very small. Despite this, it is expected that this share will grow alongside the growth of the market (see section 5.1 The potential of the digital economy for GDP growth).

Concerning past growth, FGD participants reported mixed views on the evolution of the number of jobs in the digital economy over the last two to three years: some confirmed that the number of new jobs has grown while others feel it is stable. Additionally, many FGD participants reported that the job requirements in terms of years of experience are too high for fresh graduates.

Table 13: Share of employees in the digital economy compared to the labour force

Total population in KRI (2014) ^{24 25}	5,122,740
Labour force (%) ²⁶	40%
Estimated labour force	2,049,096
% Employments in the digital economy	0.12%
% Employments requiring digital skills	0.04%

On average, each employee in the digital economy contributes by 6,200 USD to the GDP.

24 IOM, July 2018, Demographic Survey, Kurdistan Region of Iraq.

25 Latest data available.

26 https://www.ilo.org/beirut/countries/iraq/WCMS_433682/lang--en/index.htm

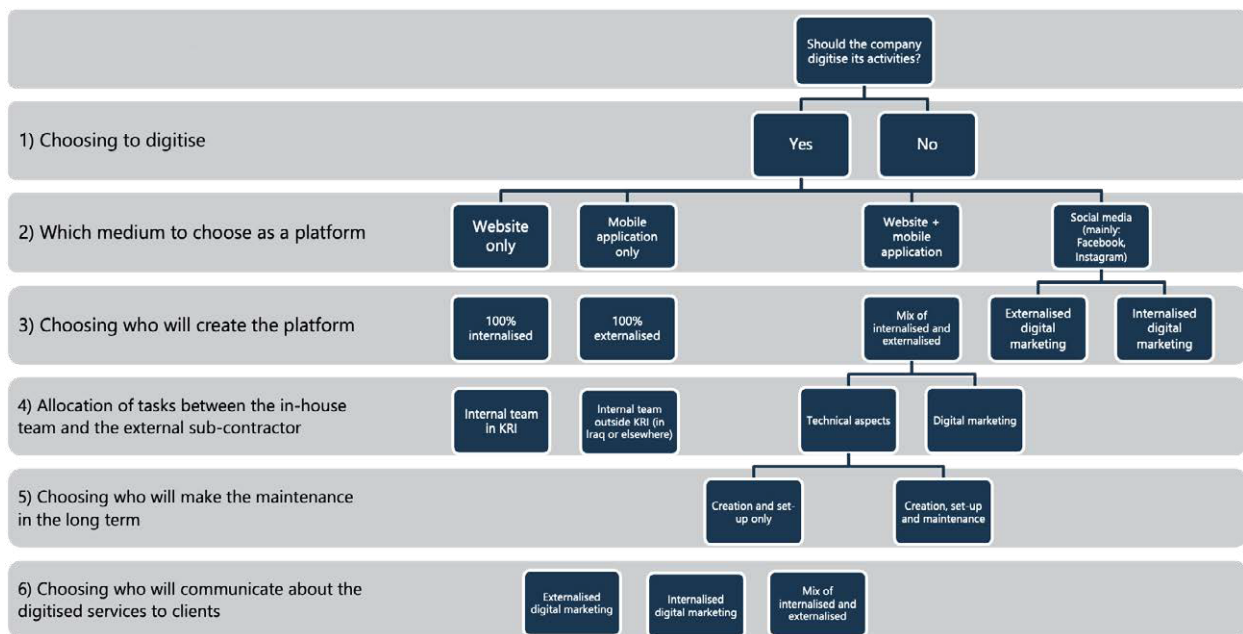
6. INSIGHTS INTO THE DECISION-MAKING PROCESS TO DIGITISE

This section analyses the decision-making process of enterprises that choose to digitise. A cost-effectiveness analysis on the digitisation of supermarkets is performed at the end of the section to analyse the effects of digitisation in terms of revenue growth and employment creation.

6.1. General decision-making stages on the digitisation process

Based on the interviews, six different stages of digitisation, represented in the decision-tree below, were mapped. Each stage presents the different options available. No path appears to be the most common. Each enterprise takes a different path depending on many factors: sector, size/stage of development, budget and the role of digitisation within their general strategy. The dynamics of the decision-making process by sector is reviewed further below.

Figure 3: Decision-making process to digitise



6.1.1. Digitisation in the retail sector

- Reasons to digitise:

It seems that the main reason why supermarkets and shops choose to digitise is to **follow international trends** in the retail sector. These actors see a potential new source of revenue or a new way to reach clients. There seems to be no proper cost-benefit analysis or market study realised prior to digitisation: decision-makers choose to digitise based on the success of other examples either outside KRI for first-movers or inside KRI for competitors. Some actors also follow the digitisation trend in order to not be eliminated from the market when it matures.

Most enterprises interviewed started their digitisation process prior to the Covid-19 pandemic. Only one supermarket decided to start the process during the pandemic.

However, **the pandemic has accelerated and strengthened their digitised offer**, for example, by adding more items to their online platform. Supermarkets had an unexpected increase in the number of online client orders during the lockdown period in KRI. Even if the number of orders decreased after the end of the lockdown, supermarkets report that they still have a high number of online orders.

Many actors in the retail sector also view their digitised offer not only as a second source of revenue but as a **source of data about their clients**. Through data collection, actors believe they can get better insights into clients' preferences and price elasticity compared to offline shopping. For example, supermarkets use this data for marketing purposes, whereas clothes shops can know instantly which models/colours/sizes sell the most. Some interviewees cited this reason as the main motive to digitise: they do not expect a high return on investment on their digitised offer (or even any return on investment in the short term) but they believe the data collected through their online platforms will feed the marketing of their offline offers.

There are several reasons why enterprises – not only in the retail sector – do not believe in the high potential of their digital services in terms of revenue. The main one is related to the limited size of the market in KRI compared to the rest of Iraq. Baghdad's market was cited many times as being the same size, if not bigger, than KRI. Other reasons why actors believe the potential of the digital economy is limited now are related to the legal framework in KRI not being protective enough (see section 3 Legislative framework of the digital economy in KRI).

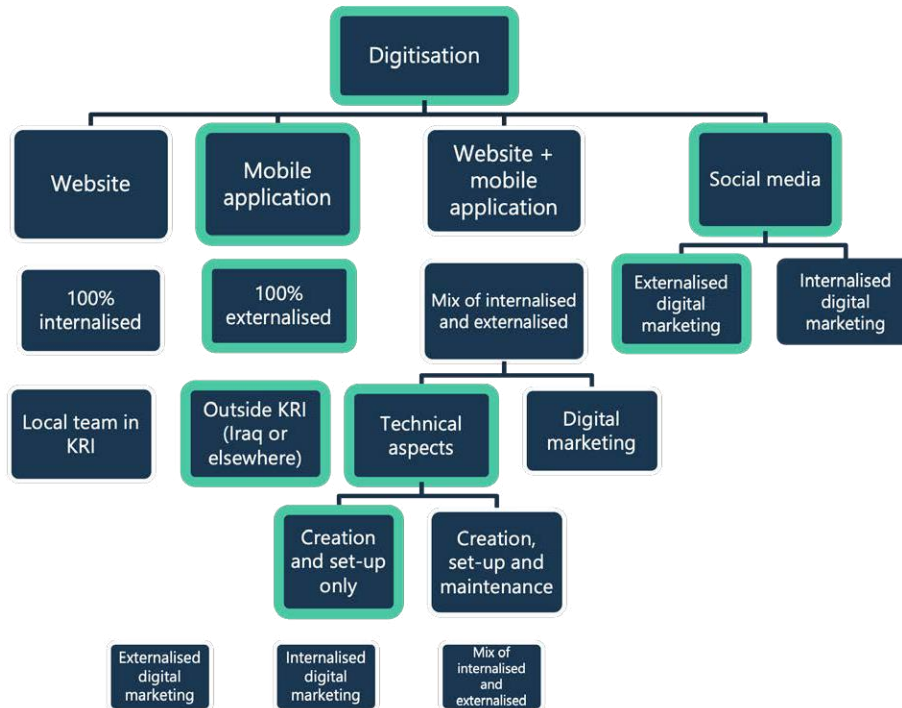
- Choosing how to digitise:

Three different processes and offers in the retail sector are to be distinguished:

- **Social media** (especially Instagram and Facebook): This is especially used by small actors who are already well-known locally. They are often old companies who already enjoy a good reputation. They have loyal clients who know the quality of their products. These actors may not fear competition much because they have a strong client base and a good reputation, which often takes a long time to build in KRI. This could explain why they do not feel pressured to rush digitisation and present a full digitised offer with a mobile application and/or a website.
- **A mobile application** and/or a website: This seems to be the most popular option chosen by actors. Supermarkets focus on their mobile application as it is more user-friendly to order large baskets compared to a website. Most actors rely on external teams (local or international) to create the mobile application and/or the website for the supermarkets. The main reason why they do not choose to create an internal team for digitisation could be because it is more expensive in the long run. External sub-contractors are paid for a limited period to create the online platform(s). They may be recontacted later for major updates.
- The reason why some actors prefer international teams (often Indian, among the interviewees) does not seem price-driven but rather quality-driven: these decision-makers believe that they will get a better application (or faster) with international sub-contractors.
- On the mobile application and/or the website, actors choose to present either all or only part of their products.
- Using **another application** as a platform: This was the case of one supermarket only which chose to partner with a food delivery mobile application which has one of the highest available networks of delivery services. The main reason why this supermarket made this decision is because their own delivery application was not ready when the

lockdown began but they did not want to miss the business opportunity. Additionally, the food delivery mobile application with which the supermarket partnered with was the only actor during a certain period of the lockdown that had a license to move around Erbil for deliveries.

Figure 4: Digitisation process in the retail sector²⁷



- Next steps:

The interviewees using social media only plan to create a mobile application in the near future even if they do not seem to have precise plans for the moment.

Regarding the interviewees who already have a platform, their next steps depend on the evolution of the demand and the general situation related to the Covid-19 pandemic.

6.1.2. Digitisation in the e-commerce sector

- Reasons to digitise:

Most actors realised the **potential of online businesses in KRI** when there were no or few actors on the market a few years back. This new potential market represented a good opportunity and founders/investors decided to take the risk to introduce this new type of online shopping in KRI. Actors were also aware that the first mover would likely get the highest share of the market. As in other sectors, it seems like there is no market study done prior to creating e-commerce platforms.

Some actors are founded and located in KRI but they deliver all over Iraq, while others were founded elsewhere in Iraq and are entering the market in KRI.

²⁷ The most common decision-making process are the cells highlighted in green.

A secondary motivation in the e-commerce sector is to **make products or services available to everyone** through the online platform. For example, the co-founders of a real-estate online platform find that their platform gives less place for discriminations based on gender, race or sexual orientation. Another example is a platform for babysitting services where the online platform renders better matching opportunities between demand and supply. A final example is a platform which aims to promote local products: the platform gives visibility to artisans and other small businesses in KRI (especially outside the main cities) and connects them with the demand, mostly located in the main cities.

Another motivation – although minor – is to **disrupt the classic business model** of offline services. For example, the co-founders of a real-estate online platform wanted to create an online service offering cheaper fees compared to real estate agencies.

- Choosing how to digitise:

Most e-commerce platforms propose **both a website and a mobile application**. The reason behind these choices is probably due to client preference in terms of screen size in order to comfortably examine products. However, most online sales happen through the mobile application. For example, 90% of sales of one of the interviewed retailers happens on the mobile application.

E-commerce actors often have an **in-house team to develop** and update their technology. Regarding e-commerce start-ups, it is almost always the co-founders themselves who work on the technical aspect of their platform. These co-founders are often either IT graduates who already know how to code or have a different specialty and learned how to code by themselves.

The main reason why e-commerce actors have their own technical team could be to keep improving the user-friendliness of the platform and the website which are important elements of differentiation between competitors. Having an internal technical team allows for more flexibility in terms of updating items and continuously improving the user experience since it is a critical element to increase revenue:

- Firstly, **the easier it is for a new client to register**, the more chance he/she will go through the whole registration process and order. Many interviewees from the e-commerce sector explained that they cannot insert too many fields for their clients upon registration. For example, some clients do not even have an email address. So, if the platform requires an email to register, it is highly likely the client will drop the process. Consequently, platforms often resort to other ways to collect personal data about their client. They often only require registering a name and a mobile phone number²⁸. These platforms often have well-staffed trilingual call centres that automatically call each newly registered client. The automatic call has a double objective: to verify that the new account is not fake, and to collect the personal data of clients by asking a few questions (gender, birthday, address, etc.). The collected data is then used to improve marketing services and send personalised promotions by SMS according to client preferences. Call centres also help clients place or finish an order online, either by indicating to the client how to do it, or by placing the order on his or her behalf.
- Secondly, **the easier it is for a client to place an order**, the more likely he/she will finish the process and stay a loyal client. The mobile applications aim to have as few clicks as possible to finish an order. Also, they try to make it easy to navigate through

²⁸ 103% of the Iraqi population has a mobile. <https://datareportal.com/reports/digital-2020-iraq>

categories, and to filter and sort products. The aim to help the client find the product he/she is looking for easily and fast. Additionally, the mobile application should be as light as possible in terms of storage to download it quickly.

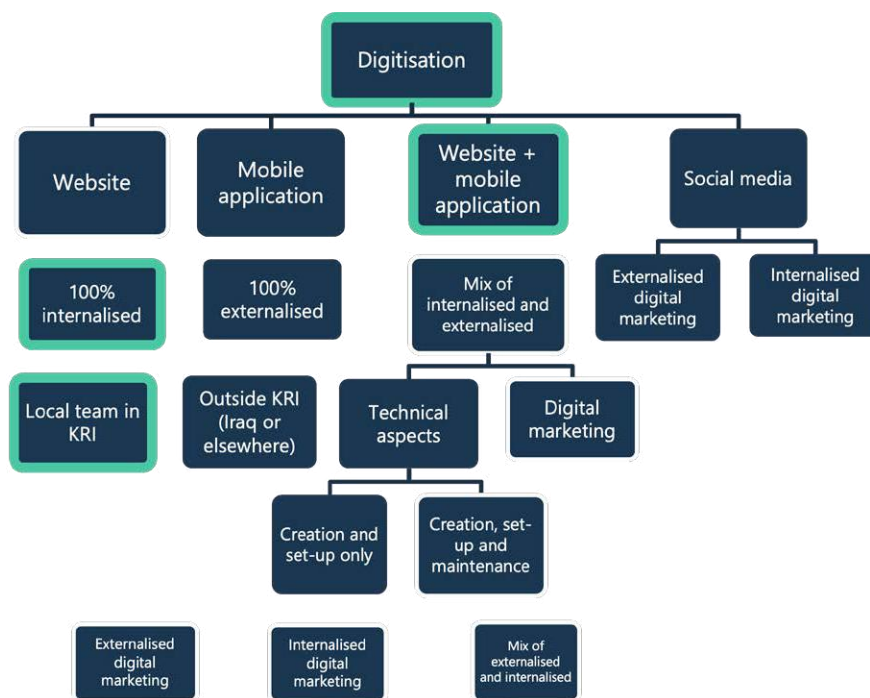
- Thirdly, e-commerce platforms add new products (or update them) often. They have many data entry employees responsible for that.

Since the application is an important element of differentiation between competitors, e-commerce actors are more likely to invest in it compared to the retail food sector, for example, where the application is not the main point of difference. Decision-makers or investors consider having an internal technical team as a return on investment.

Naturally, the ergonomics of the platform is not the only important element of differentiation in the digitisation strategy. E-commerce platforms also cited **their vendors, prices and speed of delivery** services as important points of difference.

However, limited digital literacy is blocking e-commerce platforms in their digitisation (see section 3.2 Digital literacy & culture).

Figure 5: Digitisation process in the e-commerce sector²⁹



- Next steps:

E-commerce actors who were interviewed want to **expand and be the market leader**, at least in KRI. The most ambitious also aim to expand to the rest of Iraq to benefit from the bigger and more mature market, as well as the Middle East.

For now, the market is still growing and evolving. **No clear actor seems to be the market leader**. The main goal at the moment is to build a client base: two big e-commerce actors explained that, for now, their goal is not to make a high profit but to build a trust-based relationship with their clients and a loyal client base.

²⁹ The most common decision-making process are the cells highlighted in green.

6.1.3. Digitisation in the food delivery sector

- Reasons to digitise:

The main reason why actors who were interviewed decided to create applications specifically dedicated to food delivery is because they identified an **opportunity in KRI for this demand**. Just like retailers, actors in this sector created this digital service prior to the Covid-19 pandemic which accelerated their development and the extent of their use by clients – old and new. The **lockdown period in 2020 has been a key moment** in this sector: this is when many people in KRI started using food delivery services.

For example, one of the most popular delivery applications, which had an exclusive license to deliver for a certain period during lockdown, more than doubled the total amount of orders reaching more than 10 billion Iraqi dinars (IQD) in 2020.

Food delivery actors often have **formal agreements with the supermarkets or restaurants** (or other shops) present on their platform.

“(Due to its wide use during lockdown), the English term “Delivery” entered the language instead of its Kurdish or Arabic equivalent.”

– A food delivery application

The food delivery actors are most often the ones responsible for uploading the photos and details about the products. However, some use very elementary ways to run the platform. For example, one actor did not have an agreement with the supermarket. The employees go shopping in the supermarket just like any other client, to prepare the basket ordered online. The mobile application presents prices which are a little more expensive than in the supermarket (+ 250 IQD per item on average). The problem with this kind of situation is that the application cannot be automatically up-dated when an item runs out-of-stock in the supermarket.

Beyond these reasons to digitise, food delivery applications went through a trial-and-error phase where they tested a few business models or formulas before being financially sustainable. For example, one of the food delivery applications was first launched as a digital platform where restaurants could advertise their products online instead of physical billboards. As this business model was not financially sustainable, they created a marketplace for restaurants instead.

- Choosing how to digitise:

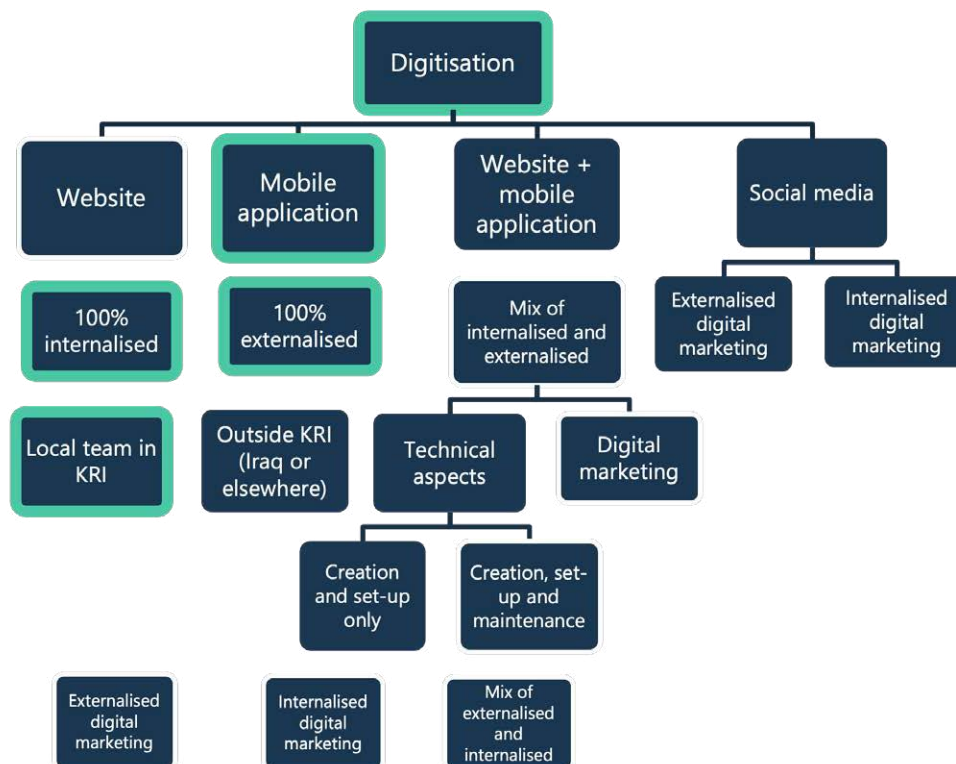
Actors in the food delivery sector choose the **mobile application** as their main platform. The reason why is similar to that of the retail sector: mobile applications are more user-friendly for quick orders. Also, it can be hypothesised that more people have a smartphone than a computer in KRI. In addition, a mobile application can be a quicker way for clients to order food, especially from restaurants. The client should be able to order from his/her car, the elevator, etc.

Food delivery actors often choose an **external sub-contractor** to create their application. Just like retail actors, they are driven by the lower cost of external sub-contractors instead of creating an internal team.

However, **one of the biggest food delivery applications has a local in-house team to develop their technology**. It must be noted that investors (in the rare case where there are any) usually prefer external sub-contractors. Indeed, having an in-house technical team is human-intensive and therefore rather costly, especially since salaries in this specific area

tend to be higher than average³⁰. We believe there are two main reasons that pushed this major actor in food delivery to keep their technical team in-house instead of sub-contracting during their rapid growth phase (which is still on-going). Firstly, having the technical team in-house allows for more flexibility. This is particularly important for a start-up growing very fast and diversifying its suppliers (for example, adding start-ups, pharmacies, etc.). In-house teams can respond faster to create new services or modify options, etc. Secondly, this fits better with their implicit ambition to become the dominant actor in this market and to expand. Again, an in-house team responds more rapidly to the demands of the rest of the team or when there are technical bugs. It is hard to be as responsive with an external sub-contractor who cannot be available at any moment for specific demands.

Figure 6: Digitisation process in the food delivery sector³¹



The digitised offer of these mobile applications often includes two sources of revenue: on the one hand, revenue from the delivery fees, and, on the other hand, **a percentage of the amount of the order** from restaurants and supermarkets. This percentage starts around 15% and goes up to 35%.

- Next steps:

The main next step of food delivery actors who were interviewed is to expand alongside two dimensions: **geographical expansion and thematic expansion**. Geographical expansion can be just within Erbil, or within KRI, Iraq or the big cities of the Middle East for the most ambitious actors (Beirut, Cairo, Amman, etc.). Again, as noted above, the current size of the market in KRI compared to Baghdad or the rest of Iraq limits their growth. As for thematic expansion, actors try to add other categories on their applications such as pharmaceutical products, home appliances, flowers, etc.

³⁰ IOM, Technology and innovation in Iraq: a market assessment of tech sector businesses in Iraq, October 2019.

³¹ The most common decision-making process are the cells highlighted in green.

6.1.4. Digitisation in the delivery sector

- Reasons to digitise:

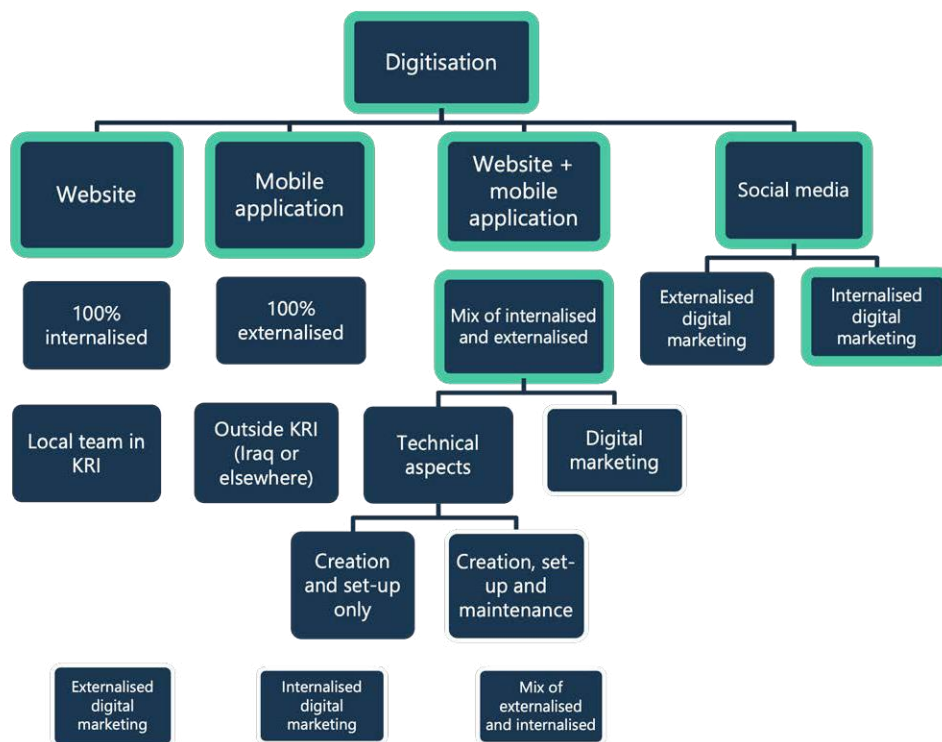
The main reason the delivery actors interviewed were founded was **out of a need** they discovered via a personal experience highlighting a gap in the market. They decided to fulfil the gap knowing that they were not the only ones facing difficulties sending or receiving items in KRI. In addition to proposing a new service, these actors also aim to improve the experience by, for example, proposing more affordable prices or knowing the location of the package in real time.

Creating a delivery company does not appear to require a large amount of capital. Indeed, many small actors only have Facebook pages, sometimes temporary.

- Choosing how to digitise:

The **digitised offer is quite large**: it can go from a simple Facebook page for the small actors up to a website and/or a mobile application for the biggest ones. Regarding the latter category, the team developing the technology can be internal or external.

Figure 7: Digitisation process in the delivery sector³²



- Next steps:

Most of the actors want to try to develop and create a mobile application and/or a website, which requires minimal clicks to make an order. One actor also wants to expand on Google so that users can add items from Amazon or another marketplace directly into their account to have it delivered in KRI.

³² The most common decision-making process are the cells highlighted in green.

The actors are also trying to add a few options that could help them differentiate, such as integrated online payments, picking up products at home for those who want to send them abroad, tracking products instantaneously, etc.

6.1.5. Digital marketing

Digital marketing enterprises are already digital by nature. Only the reason why digital marketing enterprises were founded is addressed below.

One common reason emerges throughout interviews: all founders noticed a gap in the local market in terms of IT and digital services during a period where a lot of technical development was done outside KRI (mainly in Turkey and Dubai). Most of these enterprises were founded between 2015 and 2020 (very few are older).

6.2. Cost-effectiveness analysis on the food retail sector

In order to assess the new opportunities of a business adopting digital technologies, this cost-effectiveness analysis focuses on one type of business only: the food retail sector (supermarkets). Overall, four actors which have a mobile application for online orders were interviewed, including three supermarkets (two major supermarkets and one new player) and one mobile application which delivers products from a major supermarket (this mobile application does not however have a formal contract with that supermarket).

One additional supermarket which takes orders through WhatsApp and Viber was interviewed but was excluded from this cost-effectiveness analysis as it is not comparable to the others.

- Client profile

Some clients became loyal online clients, and it is likely they will remain loyal to online orders. Most supermarkets are doing or currently planning digital marketing campaigns to increase the number of digital users.

Interviewees seemed to have **little precise data about their online clients**³³. Even among supermarkets the answers were different. The actors are however planning to better explore client data in order to work on their digital marketing strategies:

Table 14: Client profile of supermarkets

Interviewee	Age	Gender	Comment
Supermarket 1	N/A	N/A	N/A
Supermarket 2	25 to 80 years old	Male and female	Mostly living in an apartment, ordering water and heavy items
Mobile application	Late 20s to 50s	98% female	Mothers – very few single women
Supermarket 3	N/A	N/A	House far from the supermarket, clients in a hurry or do not have time

³³ See 2.7.2 Limitations.

- Revenue

Three main stages of development for online supermarket orders are identified: pre, during and post lockdown in 2020. Among the four interviewees, one supermarket launched pre-lockdown, one launched during lockdown through a partnership with a food delivery application, and two launched post-lockdown.

As can be expected, the **demand peaked during lockdown** then decreased post-lockdown. However, the demand post-lockdown is still higher than the demand pre-lockdown. For example, one supermarket (Supermarket 1 in the following table) had 150 orders per day during lockdown while orders have now stabilised at around 50 per day in Erbil. The mobile application without a supermarket contract (indicated as Mobile application in the following table) had 15 to 20 orders per day pre-lockdown. This went up to 120 orders during lockdown and has now stabilised at around 30 orders per day. The two other supermarkets that launched their mobile application post-lockdown have between 15 to 20 orders per day.

Table 15: Comparison between offline and online average baskets for supermarkets (in IQD)

Interviewee	Offline average basket	Online average basket	Average orders/day	Monthly revenue from online activities
Supermarket 1	20,000	35,000	50	52,500,000
Supermarket 2	Less than online basket	85,000	17.5	44,625,000
Mobile application	(No offline orders)	40,000 (Altai estimate)	30	36,000,000
Supermarket 3	More than online basket	Less than online basket	20	N/A
Average	N/A	53,333	32.5	44,375,000

- Cost

1. Investment:

The main additional cost involved in the digitisation process of supermarkets is the creation of the **mobile application by external sub-contractors**. Through the interviews with IT and digital marketing agencies, the cost of creating a mobile application providing basic options starts at around **8,000 – 10,000 USD**. This can go up to hundreds of thousands of USD depending on the added options.

Since the offline activities of the supermarkets bring a high amount of cash flow, supermarkets can quite easily invest in new technology.

2. Recurring costs:

The second cost – although not as costly as the mobile application development – are the **employees**, mainly data entry, order preparation and delivery.

Table 16: Total salaries related to the online business of supermarkets (in IQD)

Interviewee	Orders per day	Salary of delivery team	Salary of digital team	Total salaries
Supermarket 1	50	4,500,000	5,580,000	10,080,000
Supermarket 2	17.5	1,800,000	5,580,000	7,380,000
Mobile application	30	2,700,000	2,232,000	4,932,000
Supermarket 3	20	1,575,000	992,000	2,567,000
Average	29.4	2,700,000	4,464,000	7,464,000

- Profit

Based on the estimates above about salaries and revenue, the monthly gross profit was computed. It was hypothesised that the cost of goods sold is around 70% of revenue³⁴:

Table 17: Gross monthly profit (in IQD)

Interviewee	Revenue	Cost of goods sold	Total salaries	Gross profit	Gross profit (USD)
Supermarket 1	52,500,000	36,750,000	10,080,000	5,670,000	4,573
Supermarket 2	44,625,000	31,237,500	7,380,000	6,007,500	4,845
Mobile application	36,000,000	25,200,000	4,932,000	5,868,000	4,732
Supermarket 3	N/A	N/A	2,567,000	N/A	N/A
Average	44,375,000	31,062,500	7,464,000	5,848,500	4,717

The average gross profit is estimated at around 70.2 million IQD per year (equivalent to **56,600 USD per year**).

Depending on the investment when acquiring the technology for the mobile application, it can take between around **two months and two years for the online activities to become profitable**.

- Differentiation factors among mobile applications

The **differentiation criteria** between the different actors do not seem to be related to the digitised offer itself. Rather, differentiation lies in the quality of the products they sell, their prices and the speed of delivery. Secondary criteria is having an updated stock of products (in other words, not running out of stock) and the presentation of the packaging.

The two main reasons why clients may stop using one application are if deliveries are not on time and if items are out-of-stock too often.

- Employment creation opportunities

The employment creation opportunities in the food retail sector are **mainly related to delivery and the preparation of packages**. There are few opportunities for employment creation for digitally skilled job seekers. These opportunities are related to digital marketing since the mobile application development is done by external contractors.

34 https://www.reinvestment.com/wp-content/uploads/2015/12/Understanding_the_Grocery_Industry-Brief_2011.pdf

Indeed, as explained above, the supermarkets are looking to increase their online demand. Their strategy for online demand growth relies on heavy digital marketing.

Even during the lockdown period, the sector did not employ more because those who were working in the physical supermarkets were asked to prepare the online demand (since there was less offline demand).

Table 18: Employees and future recruitment for supermarkets

Interviewee	Total employees	Employees related to online business	% employees in digital / total employees	Minimum recruits	% Overall team increase	Maximum recruits	Minimum recruits with digital skills	% Increase in digital teams
Supermarket 1		Team in Dubai		5		6	5	N/A
Supermarket 2	10	3	30.0%	Depends on demand increase			1	33%
Mobile application	11	5	45.5%	87	791%	108	7	140%
Supermarket 3	25	2	8.0%	Depends on demand increase				
Average	15.3	3.3	28%	N/A	N/A	N/A	4.3	58%

Another issue with recruitment is that it works **by demand threshold**: a fixed number of employees can complete a certain number of demands per day. The team needs to be increased only when the demand exceeds what the current team can do. For example, the mobile application has a team of 10 employees currently processing around 30 orders per day. They estimate they can process up to 40 orders per day. The team will be expanded when demand reaches 45 to 50 orders per day.

- Conclusion of the cost-benefit analysis

Ordering groceries online seems to have become a new habit in KRI. It also seems like this habit is highly likely to remain and to continue growing as supermarkets invest more in digital marketing campaigns. However, online orders are only a complementary source of revenue to offline activities. For example, one of the supermarkets (indicated as Supermarket 1 in the tables above) estimates that around 1% of their clients use online services.

Overall, supermarkets adopting digital technologies generate revenue two months to two years after the initial investment. However, the digitally centred employment opportunities created by this digitisation process seem to be limited (4.3 new employees per supermarket).

7. TRAINING OFFERED IN KRI

Key Takeaways

- The public vocational training centres which were visited included courses on basic computer usage. However, there are no courses related to more sophisticated digital skills.
- Vocational training centres report a high uncertainty regarding the budget of public vocational training centres for 2021 (and government salaries and operational budgets in general).
- This study did not find digital marketing training in KRI.
- The public vocational training centres have the potential to host digital modules. It is however necessary to assess the technical level of trainers and to assess the software which would be needed to organise the training.

7.1. Public vocational training centres

Any training offered by these vocational training centres is entirely **free of charge**. The Vocational Training Centre in Sulaymaniyah even pays students a small per diem (around 8 USD) which is supposed to cover breakfast and transportation costs since the centre is around 15 minutes from the city by car.

7.1.1. Training offered

The courses offered by the three vocational training centres are almost the same, whereas the Swedish Academy for Training (SAT) has slightly different courses since it aims for a higher level of students.

The closest training to digital economy offered in these vocational training centres is the **computer training**. The curriculum was developed by the International Labour Organization (ILO). There is no training regarding web development or mobile application development or data sciences. Only the Vocational Training Centre in Sulaymaniyah offers training in graphic design and general marketing (not specific to digital marketing). This specific training was organised by the REACH Initiative.

The computer training lasts **45 working days minimum**. Thirty days are entirely dedicated to computer training while 15 days are dedicated to training around various life skills, the basics of business, labour law and security at work. Most classes take place in the morning from 9am to 1pm. Some evening classes may be organised, but this remains rare. Generally, evening classes are organised when required by international organisations financing the training.

So far, there is only one **rather basic level offered** for the computer training. It appears that MoLSA prefers to have a unified curriculum. The content covered in the computer training is very similar across the three vocational training centres even if each trainer has some margin to adapt the content according to the level of the trainees. The following topics are covered during the training: how computers work, computer hardware, Microsoft Windows, changing/repairing computer or laptop parts, Microsoft Office (Excel, Word, PowerPoint) and using the internet. Generally, sessions first cover the theoretical elements before being applied in a practical workshop.

At the end of the course, participants receive a certificate of participation if they did not miss more than three days of class. There is no examination to validate the course.

During the visits of the TVETs, it appeared that the courses are taught in Kurdish.

7.1.2. Focus on the Swedish Academy for Training (SAT)

The Swedish Academy for Training presents some particularities compared to the other public vocational training centres. It aims for a higher level of students and training content. It has the same status as the other training centres but it is recognised as more elitist.

The Swedish Academy was initially founded by the Swedish government. The objective was to open an assembly line for Scania³⁵ in Erbil and this centre was supposed to train future workers. The assembly line did not eventually open but the centre remained and expanded its training portfolio.

The age requirements are different compared to the other TVETs: the SAT accepts students who are between 18 to 35 years old whereas the other public vocational training centres accept those between 16 to 45 years old. In addition, applicants must pass an examination and an interview to attend the course. Only those with the highest grades are selected. As a result, the level of students at the SAT is higher than that of other vocational training centres.

Furthermore, the computer courses at the SAT seem slightly more advanced. Also, there is more emphasis on practical exercises that enhance trainees' employability. For example, they learn how to use Excel for accounting purposes or to create lists of items. Additionally, more advanced Excel classes can be offered on demand, even if this happens rarely (only twice, for civil servants working as accountants at the municipality).

Additionally, the SAT has established international partnerships with Scania and CISCO Networking Academy for specific training – one of the few institutions in Iraq offering these international CISCO certificates.

The SAT was evaluated by the federal MoLSA in Baghdad which considered setting it as a national example of a successful vocational training centre.

7.1.3. Number and profile of students

In total, around 1,800 to 2,000 students³⁶ underwent training at one of the seven vocational training centres in KRI³⁷.

In 2019, 1,673 students underwent training at the four vocational training centres which were interviewed. Compared to the total students who attended a vocational training centre, these four centres cover approximately between 83.7% and 92.9% of students.

Within these four vocational training centres, 298 students attended computer training which represents around 17.8% of registered students. Given that vocational training centres offer between 10 and 15 different training courses, the percentage of students attending computer courses seems higher than that of other courses. This shows an interest in computer skills and a potential interest in future digital skills training.

³⁵ Scania is a major Swedish company which manufactures heavy lorries, trucks and buses.

³⁶ Interview with the Directorate of Labour and Social Security at the MoLSA.

³⁷ The three additional centres which we did not visit are in Garmian, Soran and Zakho. The MoLSA also cooperates with the private sector vocational training centres and some NGOs in the provinces where there are no centres.

Table 19: Number of students attending vocational training centres in KRI

TVET	Total students	Computer students	% Computer students
SAT (Erbil)	621	186	30.0%
Erbil	347	55	15.9%
Duhok	341	37	10.9%
Sulaymaniyah	364	20	5.5%
TOTAL	1,673	298	17.8%

To recruit students, public vocational training centres advertise upcoming courses on their Facebook page. They also advertise on nearby billboards.

There are two mandatory requirements to register for computer training. Firstly, **one needs to be between 16 and 45 years old**. On average, students who attend computer classes are between 20 and 30. Secondly, **one needs to have obtained their 9th grade certificate**.

For the computer training, vocational training centres select students who applied by a process known as **profiling**. The objective is to verify that applicants comply with the above-mentioned requirements and that they speak/read very basic English and know how to basically use a computer (for example, testing if an applicant knows how to turn it on and off).

Generally, the vocational training centres try to have **gender-balanced classrooms**. In Duhok in 2019 for example, 59% of overall students were women. At the SAT in Erbil in 2019, 281 students were female (45.2%). The vocational training centres in Sulaymaniyah and Erbil estimate respectively that around 60% and 50% of their students are women.

As for refugees and IDPs, they can register in these courses without any extra-requirement compared to citizens from KRI. Moreover, there are no fixed quotas for refugees and IDPs. However, some Syrians may find it hard to show proof of their 9th grade certificate which needs to be certified in Syria. Depending on their personal situation, some Syrians may not have access to this certificate anymore or it might be challenging to certify it back in Syria.

In Duhok in 2019 for example, 84 refugees and 88 IDPs attended training (24.6% and 25.8% of total students respectively). At the SAT in Erbil, 20 refugees and 21 IDPs attended computer training in 2019 out of 186 participants (10.8% and 11.3% respectively). The Vocational Training Centre in Sulaymaniyah estimates around 25% of its students are refugees.

“Since the Syrian crisis, we decided to treat Syrians as sons of this country. We make no difference between them and Iraqis.”

– Directorate of Labour and Social Security at the MoLSA

7.1.4. Relationship between vocational training centres and the labour market

Generally, it seems that the **connection between the vocational training centres and the labour market is rather weak**. The main reason is because the vocational training centres themselves are not responsible for the assessment of the labour markets demands and its evolutions – the MoLSA is. This directly limits the possible interactions with the labour market.

However, the vocational training centres generally agree that a **stronger connection with the labour market would reinforce the potential employability** of students through practical workshops, for

example. Only the Vocational Training Centre in Sulaymaniyah tries to follow-up with the market and what skills are in demand. In addition, this centre sent students, as part of a program with the DRC, for a two-month practical internship.

In addition, there is no formal relationship kept between the vocational training centres and their alumni. At the end of the year, the SAT generally contacts, on its own initiative, students who completed training that year. It last contacted students in 2018 and found that 366 students out of approximately 600 were employed six months after the training. Some trainers keep in informal contact with prior students.

All vocational training centres agree that it is difficult for students to find job opportunities related to their computer training. For example, the Vocational Training Centre of Duhok believes that most graduates work as cashiers or secretaries. The Vocational Training Centre in Erbil believes that it is very challenging to be recruited by a private company to work in IT because the level of the training offered is basic compared to the IT needs of private companies.

7.1.5. Budget of vocational training centres

The budget of the public vocational training centres has been decreasing for a few years, especially since 2018. The centres have little visibility on their budget for 2021, hence little visibility on the training they will be able to provide. The centres find themselves dependent on the support of international organisations.

In fact, all these centres provide training which is organised and/or financed by international or local organisations (DRC, REACH initiative, UNESCO, UNIDO, ILO, Rwanda, etc.).

7.2. Private vocational training centres

The private centres are independent centres (*maa'had* in Arabic). They are not affiliated with a university.

7.2.1. Relationship with government officials

Overall, there are 48 private vocational training centres in KRI which are officially recognised.

The private centres do not seem to have a direct relationship with the MoLSA but rather with the Ministry of Education.

The Ministry of Education defines when the application period can open. The vocational training centre studies the profile of students and accepts those who fit the requirements. It must be noted that the Ministry of Education sets the maximum number of students who can be accepted. Once accepted, the profile of the students must be sent to the Ministry of Education as all the students in the private centres must be registered with the ministry. At the end of the program, the official degree is conferred from the Ministry of Education.

They do not receive any funding from the government nor from international or local organisations.

The private centres explained that they would need the authorisation of the ministry to open a new specialty. There is one official per specialty at the ministry, and if the ministry does not have a specialist for a certain area, then private centres cannot propose a new training in this specialty. This is why, for example, the centre could not open a new specialty in digital marketing.

7.2.2. Student profile

There are between 60 to 90 students per year at each of these private centres, totalling between 300 and 450 students over the five years.

These courses are mainly attended by students who leave school before getting their bacculaureate, often around 16 years old. The first year at these private centres is the equivalent of the 10th grade for students who come straight from school.

A few students however previously stopped school for a few years and got back to studying at the centre to get a degree, to evolve professionally or to get a better position within the civil service³⁸.

Around 30% of the students from one of the private centres come from low-income social backgrounds. Due to the financial crisis KRI is going through, many are not being able to pay their tuition fees and might drop out of their studies.

There are very few refugees or Syrians in the private centres although the requirements to register are the same as the public vocational training centres (presentation of 9th grade certificate). In one private centre, there are around 10 Syrian students (3.4% of students in the computer department). In the second private centre, all students are Kurdish (there are no Syrians) and mostly from Erbil. One explanation given by the first centre suggests that this is because it is challenging for Syrians to prove their 9th grade certificate and have it approved by the Ministry of Foreign Affairs in Syria. The procedure is quite long. The Ministry of Education refuses the registration of any student without their 9th grade certificate. We believe that the price of the centre is quite expensive for Syrians (or refugees) arriving to Erbil and that could be another significant barrier.

The first private centre has around 120 IDPs (40.3% of students in the computer department) whereas the second private centre has no IDPs.

Compared to public centres, there are less women in the private ones – between 30 to 35% of students.

7.2.3. Course content

Compared to the public vocational training centres, the courses are much longer at the private centres. **They last five years** (compared to 45 days in public centres). The course content related to IT and digital skills naturally covers more than what the public vocational training centres can do in 45 days. The first three years are general and common to all students while the last two years see students specialise in a single area. This structure stems from the Ministry of Education and, unless they have international accreditation, the centres must follow it.

For example, one of the private vocational training centres teaches Microsoft Office, web design, three programming languages (C++, Java and PHP), html, database (MySQL), networking, server operating system, photoshop, Python and cloud technologies (Google Cloud) among others.

The other private centre studied had three specialties: web design, network design and programming. They teach Microsoft Office, web development, programming languages (C++, Java and PHP), many databases (MySQL, SQLite, GraphQL), graphic design, user interface design, management of information systems, cloud technologies (Google Cloud), statistics, data visualisation, Matlab and visual basics among others.

The curriculum of these private vocational training centres is developed by external actors

³⁸ The degree a civil servant has impacts his/her position.

(University of Kurdistan – Erbil, and a private institution in Austria, for instance). The content is regularly updated.

The language in the first centre is mixed. There are nine sections which study in Arabic and 11 sections which study in Kurdish.

Each year costs around 1,450 USD, totalling around 7,200 USD for the five years at the centre. It should be noted that the government determines the tuition fees of these private centres.

7.2.4. Teachers and infrastructure

Regarding infrastructure, the size of computer classrooms is about the same as the public training centres (26 computers per classroom for one of the centres, for example).

Most teachers are software engineering graduates. Since the working day at the centres is between five to six hours, most teachers have another part-time job alongside teaching in the IT or digital economy. Some are even professors at the software engineering department at a university.

7.2.5. relationship with the labour market

Since most teachers work part-time alongside teaching, or teach at university as well, the private centres are well aware of the needs of the labour market and the latest technological updates. The curriculums can therefore be updated in that sense. In fact, teachers update the curriculum every year.

The contrast in employability between students of the two private centres studied is stark.

Table 20: Situation of the graduates of two private centres

	Continuing studies at university	Working in the IT/digital economy	Working in another sector	Did not find a job
National Technical Institute	20%	60%	20%	Few
Byte	15 to 20%	10 to 15%	N/A	70%

There is a deeper relationship with the labour market during the years of study compared to the public vocational training centres. For example, at the first centre, Korek Telecom comes every year to meet the students and recruit the best ones (three to four students every year). The second centre takes the students on a scientific trip every year, either to Korek Telecom or the software engineering department of a university, for example. These trips are organised by the teachers through their contacts or their other job.

However, none integrate internships into the five-year curriculum. In the second centre, students must carry out a project where they can get in touch with a company to collect data.

None of these centres seems to have an alumnus network or keep in organised contact with their previous students. Though both do have a Facebook page for student/alumni engagement.

7.3. Universities

The courses at university³⁹ concern mainly computer sciences/computer engineering/software engineering and last four or five years.

Generally, **FGD participants were not satisfied with their courses at university**. For example, participant 1 found that “what we studied was very simple. From year one to year three, we are only being taught how to operate computers and how to use the mouse. The curriculum is limited to very general basic things, such as how to use the computer. Years four and five, we learned how to use Excel, PowerPoint and Word, programming, coding”. Participant 4 found that “what one can learn in three months’ time through Coursera and Udemy, he will learn in one year through university courses. University takes time without teaching you anything in depth. University was just opening the door to knowledge about IT without making anyone ready for the workplace”. In addition, participant 9 found that “most of the things we learn at university are theory and very little is practical knowledge”.

“We have study programs that are not used in the market by the companies. So our knowledge and what we have studied is outdated or not compatible with the market demand.”

– FGD, Participant 4

7.4. Other courses for digital skills

A few **bootcamps** are organised by different actors such as Re:Coded or Five One Labs in Sulaymaniyah.

Two other courses at **IT institutes** in Erbil were mentioned by FGD participants: Noble Technical Institute (two-year program)⁴⁰ and Amal Institute⁴¹.

The Noble Technical Institute requires a baccalaureate to register. It teaches, among others, C++ and html, but the teachers teach only in Kurdish. It is required to do an internship between the first and second year.

7.5. Other points to note

According to many interviews with both enterprises and FGDs, there seems to be **no courses in KRI on digital marketing**.

Many interviewees and FGD participants shared that they use online videos to learn digital skills.

7.6. Potential of public vocational training centres to host digital training

7.6.1. General infrastructure

The general infrastructure (building, classrooms) of the four vocational training centres are in **good and sometimes excellent shape**. They are well-maintained and ready to be used.

Most are located inside the city and are easily accessible by trainers and trainees. Only the Vocational

³⁹ Recurring universities where FGD participants studied: Salahaddin University and Tishk International University.

⁴⁰ <https://www.hawa.jobs/clients/noble-institute>

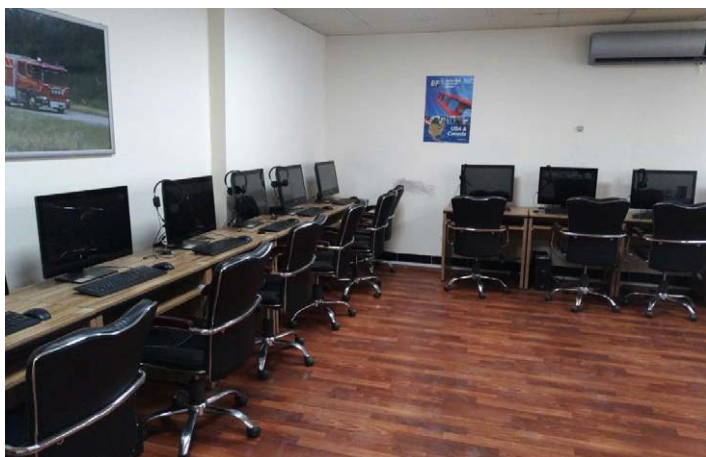
⁴¹ Not found on the internet.

Training Centre in Sulaymaniyah is 15 minutes from the city by car. But as explained above, students get a per diem of around 8 USD to cover transportation fees and breakfast.

These vocational training centres are quite big. They all have one dedicated classroom per type of training with the relevant equipment (computers, kitchens, machines, etc.). The classrooms are all spacious. Usually there are between **20 and 25 students per classroom** without overpacking the space. Each trainee has his/her own desk and chair.

The Vocational Trainings Centre in Sulaymaniyah pointed out that they have an issue with the electricity cuts and that they need a better supply of electricity or a generator. The other vocational training centres did not mention anything around this issue.

Picture 1: Computer training classroom at the SAT (1)



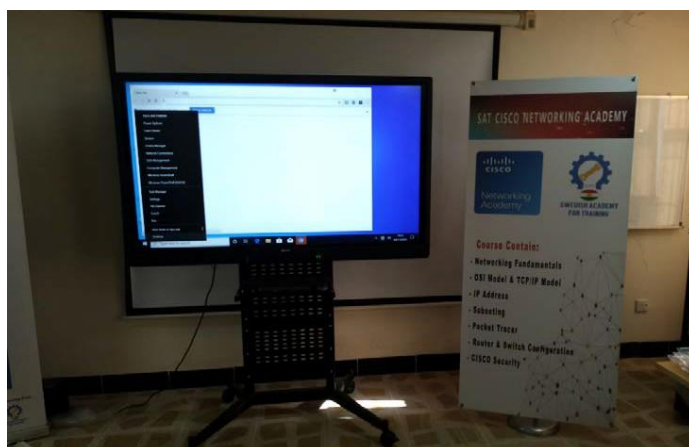
Picture 2: Computer training classroom at the SAT (2)



Picture 3: Computer training classroom at the SAT (3)



Picture 4: Screen for teaching at the SAT



Picture 5: Computer training classroom at the Erbil VTC



Picture 6: Computer training classroom at Duhok VTC⁴²



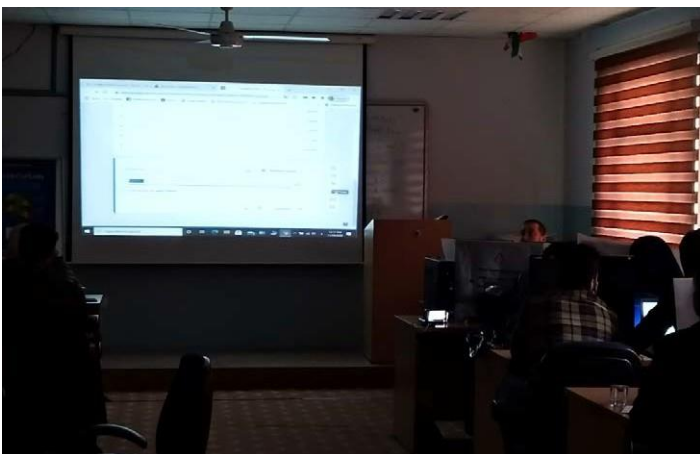
Picture 7: Entrance of the Duhok VTC



Picture 8: Computer training classroom at the Sulaymaniyah VTC (1)



Picture 9: Computer training classroom at the Sulaymaniyah VTC (2)



Picture 10: Entrance of the Sulaymaniyah VTC



⁴² The computers are in the cupboard since there are no students due to the Covid-19 pandemic.

7.6.2. IT infrastructure

All four vocational training centres are equipped with enough computers to host the digital courses. Generally, the computers all seemed relatively new and in a quite good shape. However, we suspect that these computers do not have the appropriate software or other online tools needed to teach specific digital skills.

The SAT has more than five classrooms specifically for computer classes with 20 computers per classrooms (except the CISCO classroom, which has 12).

The Vocational Training Centre of Duhok has 22 computers while the one in Erbil has 20 computers. The centre in Sulaymaniyah has two classrooms with 33 computers each. Additionally, they have 25 laptops for training graphic design.

7.6.3. Teachers

All four vocational training centres repeatedly insisted that the teacher(s) of the computer training would have the ability to teach training related to digital skills. Most of the training centres made us meet with the computer training teacher.

For example, the SAT explained that the computer teacher keeps learning and attending Trainings of Trainers (ToT). This teacher does not want to teach the same curriculum for too long. He has experience in updating curricula and providing new training.

7.6.4. Expression of interest

All four vocational training centres explicitly expressed a high interest to host digital training courses and add them to their training portfolio.

For example, the Swedish Academy for Training said it liked to offer new courses, especially ones that are not offered elsewhere.

There might, however, be a conflict in schedule between computer training and digital skills training concerning the availability of teachers and the availability of the classrooms with computers. One solution could be to alternate computer training and digital skills training even if this implies offering less digital training than what would be possible if computer trainers and classrooms were available full time.

A third solution would be to organise digital skills training in the afternoon. In this case, an additional payment should be offered to the centre and to the teacher whose working hours are only in the morning. For reference, trainers in Sulaymaniyah are paid around 80 USD per session for trainings organised by international organisations.

7.6.5. Perception of TVET by digital economy enterprises

Although most founders and employees in the digital economy in KRI are university graduates, enterprises **did not generally express any reservation** against recruiting jobseekers who went through a vocational training centre, as long as they have the skills required for the job. Employers insisted on the fact that when they recruit, **they look for technical and language skills** before looking at the degrees, as well as some experience ideally. Even projects undertaken at university are considered as experience.

7.6.6. Perception of TVET by FGD participants

Generally, **FGD participants did not express any reservation towards participating in training organised by a vocational training centre.** As long as the training equips them with skills that enhance their employability in the labour market, participants would not mind attending vocational training centres.

Participants who already had a bachelor's degree in an area close to the digital economy were more reluctant to attend training as they would prefer to obtain a master's degree instead if they were to study again.

Many FGD participants insisted that they would like an emphasis on practical exercises in the training provided. This would help them be more prepared for the labour market. Some even suggested having digital enterprises do presentations or a practical workshop during training.

8. SKILLS NEEDED TO WORK IN THE DIGITAL ECONOMY

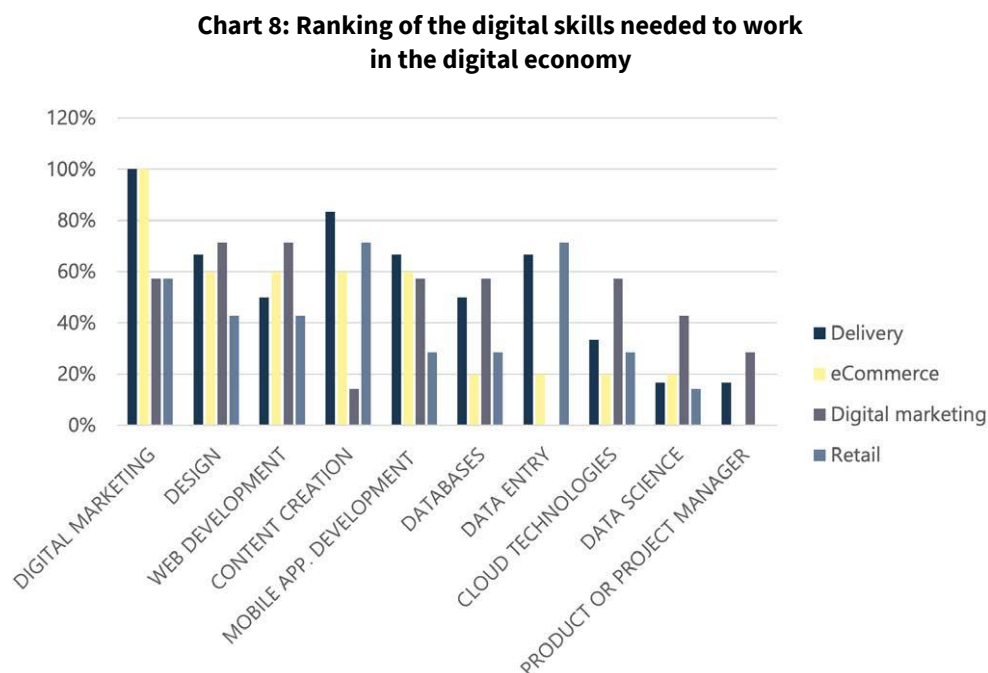
Key Takeaways

- Based on the interviews, enterprises in the digital economy mostly need skills in digital marketing, web design, web development, content creation and mobile application development.
- Based on the self-assessment of FGD participants, they seem to have little knowledge in these skills, apart from content creation which is a less technical skill compared to the others.
- Enterprises in the digital economy seem to prefer candidates who are trilingual (English, Kurdish and Arabic) or at least bilingual (English and Kurdish or Arabic).
- The barrier of the Kurdish language makes it more difficult for refugees, non-Iraqis and IDPs to obtain a job in the digital economy in KRI.

8.1. Skills needed by employers

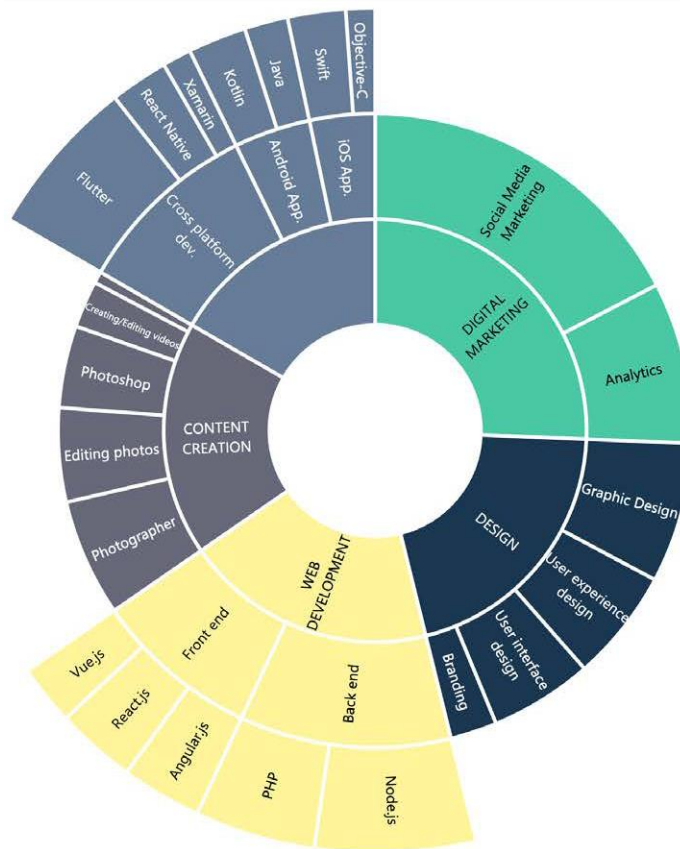
8.1.1. Technical skills

The chart below shows the ranking of the digital skills needed to work in the digital economy according to the enterprises interviewed.



As shown in the chart above, the top five skills (digital marketing, design, web development, content creation and mobile application development) are, at least, in the top four skills needed by each category of digital enterprises.

This finding suggests that digital skills are transverse to many sectors in the digital economy. It implies that employees in the **digital sector can easily move from one category to another** during their career.

Chart 9: Detailed digital skills needed by enterprises

As a caveat, many enterprises – especially the largest ones – warned during the interviews that they do not expect their new recruits to have the skills they look for, or at least at the level they need. Employers tend to focus more on other elements they consider important, such as logical thinking and mastering the basis of coding for digital marketing enterprises. Their recruitment strategy is to **identify promising fresh graduates** who they are willing to train in order to enhance their technical skills.

8.1.2. Soft skills

Based on the interviews, the soft skills that employers look for are **very diverse**. No clear consensus arises from the collected data.

The most cited soft skill is **communication**: employers want employees who can communicate clearly and who would know how to manage client relationships. This soft skill especially applies to online client-facing positions in retail, e-commerce and delivery. Indeed, in these categories, customer service is an important element to build a loyal client base. **Sales skills** are also important in these positions. Communication seemed to be less important for digital marketing actors, probably because digital marketing employees face clients less.

Employers in the digital marketing sector look for employees who have a positive **learning attitude** and are fast learners. This is in line with their recruitment strategy: indeed, since most enterprises from the digital sector do not think that the relevant skillset is available in KRI, they choose to recruit fresh graduates who they upskill and train on the job. This is why having a strong learning attitude is important in this sector. Additionally, since programming and coding languages are often updated, employees need to be able to stay up-to-date with the latest developments.

Furthermore, in the digital marketing sector, employers also look for **logic and problem-solving skills**. For the same reasons cited in the paragraph above, these skills are critical for coding and programming.

Creativity is another soft skill that employers need, especially for digital marketing and content creation.

Finally, although this might be more of an attitude rather than a skill, start-ups seem to be especially looking for a **risk-taking attitude** to support business development.

8.1.3. Language skills

English seems to be necessary to work in the digital economy. Firstly, most coding languages are in English. Secondly, most clients who use digital economy services and/or products speak English.

Most enterprises explained that they **ideally seek trilingual** employees who speak English, Kurdish and Arabic. This seemed especially important for enterprises which are in direct contact with clients (mainly retail, e-commerce and delivery) in order to be able to interact with the client according to his/her language. This interaction can be both oral or online through social media or a website or an email. For example, some respondents have websites in the three languages noted above and/or post on social media in these three languages. This is why they would prefer to have trilingual employees.

However, most of these enterprises find it extremely hard to identify employees with both the right set of digital and language skills in KRI. This challenge is even more acute with the younger generation (below 35 years old) who rarely speak Arabic⁴³.

As a result, **two languages** are at least required according to most interviewees: English and Kurdish or Arabic. Many employers try to have a mix of bilingual employees in their office (employees who speak English and Kurdish as well as employees who speak English and Arabic). This mix of bilingual employees allows the three main spoken languages in KRI to be present within the team.

8.1.4. Other skills

Interviewees also mentioned they look for **trustworthy** employees – especially in the digital marketing sector where employers want to be assured that employees will not steal parts of the code.

8.2. Mapping the skill gap

8.2.1. Comparison between FGD digital skills and enterprises' digital skill needs

The results of the self-assessment of FGD participants is shown in the graph below. The digital skill areas in which participants have some knowledge at any level (advanced, intermediate or basic) are compared to the areas in which they have absolutely no knowledge.

The results are rather **contrasted**. FGD participants seem more knowledgeable in some areas such as data entry and content creation, which are among the least technical skills.

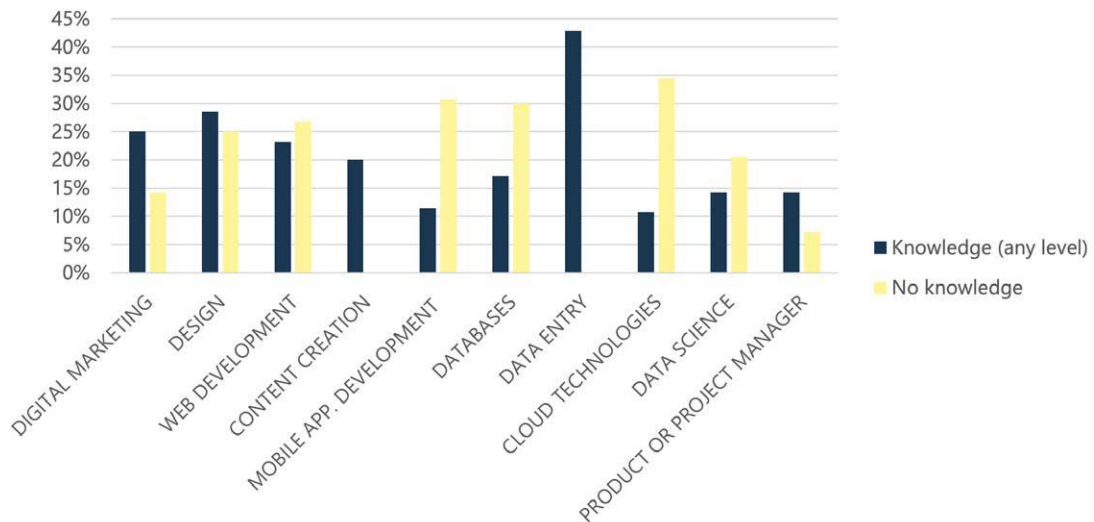
FGD participants seem least knowledgeable about cloud technologies, mobile application

⁴³ <https://iwpr.net/global-voices/echoes-arabic-fade-kurdistan>

development and databases, which are among the most technical skills.

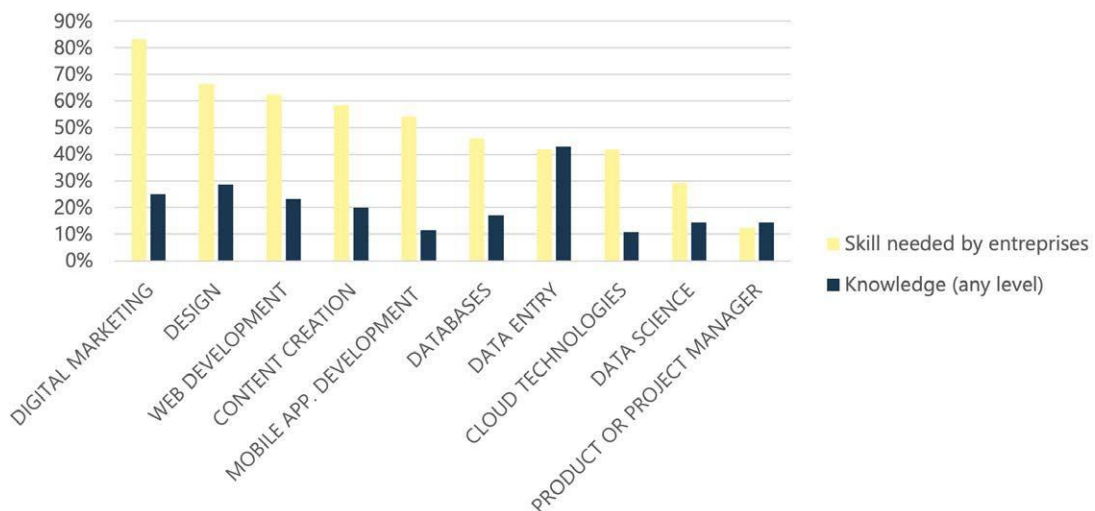
Regarding web design, web development and digital marketing, knowledge is very variable: around half the participants have some knowledge in these areas while the other half have no knowledge.

Chart 10: FGD participants' digital skill self-assessment



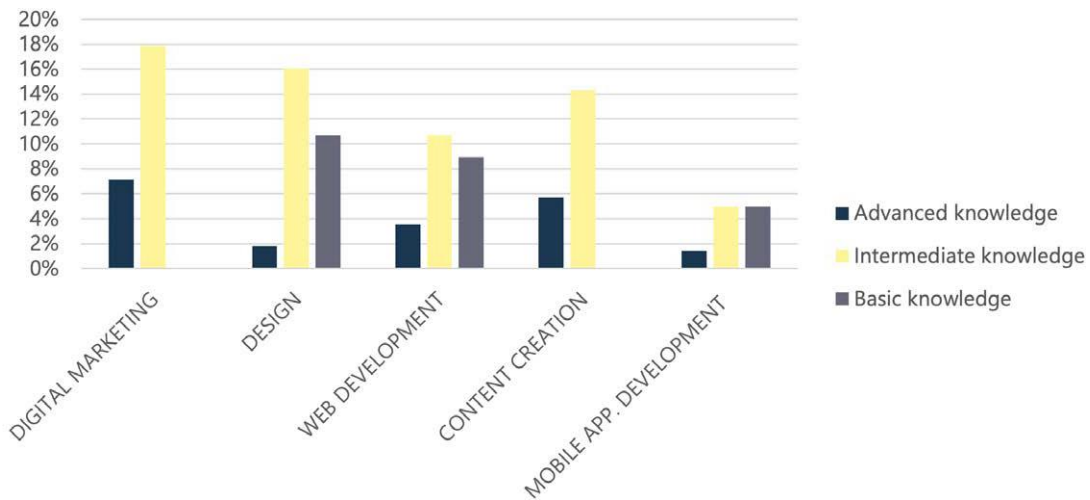
When comparing participants' knowledge to enterprise need, it appears that very few participants have knowledge of any level in the top five skills needed by enterprises, apart from content creation which is less technical than the other areas.

Chart 11: Knowledge of FGD participants compared to enterprises' needs



Very few participants showed advanced knowledge in any of the top five digital skills needed by employers. However, many showed intermediate or basic knowledge except for mobile application development.

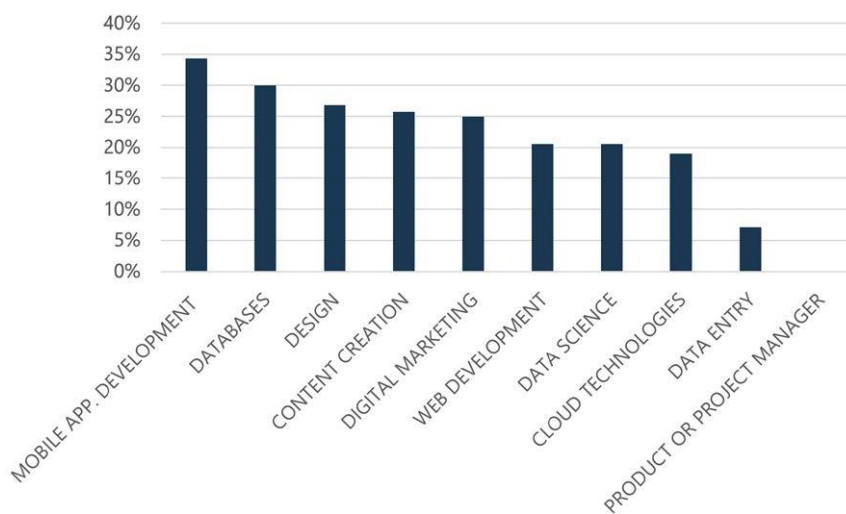
Chart 12: Level of knowledge of FGD participants in the top five skills needed by enterprises



8.2.2. Comparison between FGD digital skill interests and enterprises' digital skill needs

The graph below presents the digital skills areas that FGD participants are interested to learn.

Chart 13: Interest of FGD participants in digital skills



When comparing the ranking of digital skill areas in which FGD participants are interested in learning with the digital skill areas which enterprises in the digital economy need, we observe somewhat of a **match**. The top five skills needed by enterprises are also in the top interests of FGD participants even though they are not in the same order. For example, FGD participants' top interest is mobile application development while it is the fifth top skill needed by enterprises.

Web design, content creation and digital marketing are mostly solicited by women whereas web development and mobile application development are solicited by both men and women.

9. RECOMMENDATIONS

Key Takeaways

- Based on the results of the interviews and FGD:
- It is recommended to develop the following modules: social media marketing, web design, front end and back end development, content creation and mobile application development on Flutter.
- It is recommended to assess the technical level of the teachers at the vocational training centres.
- It is recommended to keep a line of budget to finance the training courses and the material needed.
- It is recommended to create a job-matching platform to facilitate the job finding process for jobseekers.

9.1. Recommendations related to digital skills modules

Based on the results of the digital skill forms which were completed by almost all interviewees, it is recommended to develop the following modules:

- Social media marketing
- Web design: graphic design, user experience design and user interface design
- Front end web development (node.js and PHP)
- Back-end web development (react.js, angular.js and vue.js)
- Content creation (editing photos, Photoshop)
- Mobile application development (Flutter).

Creating a clear branding for these digital skill trainings (such as digital certificates on LinkedIn or paper certificates clearly stating the skills acquired during the training) could bring more credibility to these courses on the labour market. A final examination or a final project could also be added to increase credibility.

Based on the needs of FGD participants, the modules should include **practical exercises**⁴⁴ to better prepare students for the job market. They could also include, for example, a personal project to present at the end of the training.

An internship could also be included in the program to enhance employability. In that case, training centres should support the students in finding suitable internship places.

Creating a list of requirements for students who would like to register in these modules would help public vocational training centres scan candidates (a process called *profiling* by these centres). This list could include, for example: basic English, basic use of computers (or having previously taken the computer training at the vocational centre), etc.

⁴⁴ This is also mentioned in the Terms of Reference.

9.2. Recommendations related to public vocational training centres

Based on the observations during the visits of the public vocational training centres, it is recommended to:

- **Assess the level of computer trainers in digital skills** as it is not known at this stage if they have any or part of the skills of the digital modules which will be delivered.
- Assess the language skills of computer trainers in order to know in which language the ToT should be delivered.
- Keep a line of budget for vocational training centres to **finance digital courses** (for example, contribute to paying trainers, print the curriculum, etc.).
- Allocate a budget to **buy, install and maintain digital tools and software** to teach digital modules.

If the technical assessment of current teachers at the vocational training centres show they do not have the required technical level to teach digital skills, it is recommended to either teach them or to recruit additional teachers who could teach these skills.

9.3. Creating a job-matching platform

Since there are no dedicated job-matching platforms or head-hunters specialising in the digital economy and since both enterprises and FGD participants face multiple challenges to recruit/be recruited, creating a **job-matching platform** could help job seekers find opportunities in the digital economy. Enterprises can post job opportunities while candidates can apply directly on the platform. An option could be included to indicate whether the job requires speaking fluent Kurdish so that Syrians (and non-Kurdish speakers) can better identify if they match the job requirements.

The platform could also include **feedback loops for vocational training centres** where employers can share suggestions to keep updating the curriculum since coding languages and digital trends change very quickly.

9.4. Recommendations for policy-makers

Even if this is not the focus of this market study, some recommendations which could support the development of the digital economy emerged during the interviews. These recommendations are more relevant to policymakers:

- Protect **intellectual property** more (especially for digital marketing companies).
- Help enterprises protect themselves against customers who cancel or change orders at the last minute by implementing **online payment systems**, for example.
- Protect enterprises against fake goods by toughening the **inspection of goods** at international and national custom- and check- points.
- Implement a postal address system to create more efficient delivery processes.

