

# Sales Analysis for an Electronics Retailer

## Objectives:

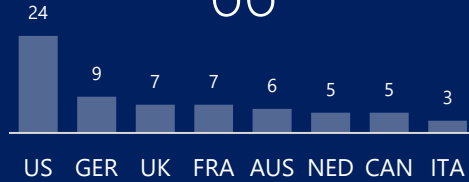
- Understand the business (customers, stores and revenue).
- Descriptive analytics on decrease in revenue in 2020
- Identify possible optimizations like poor performing stores, poor performing products



# Data Context – Business At A Glance

## Stores

66



## Revenue

USD 55.76M

## #Orders

26,326

## Profit%

141%

*\*includes 6 years of data*

## #SKUs Registered

2,517

## #Brands

11

*~30% of SKUs belong to Contoso brand*

## #Categories

8

*~50% of SKUs belong to  
Computers & Home Appliances*

## SKU Price Range (USD)

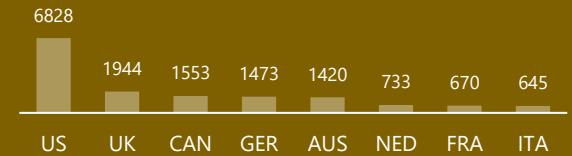
1 - 1000

*Profit percentages range between  
100% - 200%*

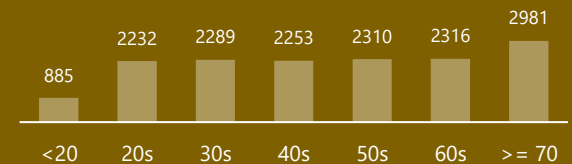
## #Customers Registered

15,266

## Split by country



## Split by age groups



## #Customers Purchased

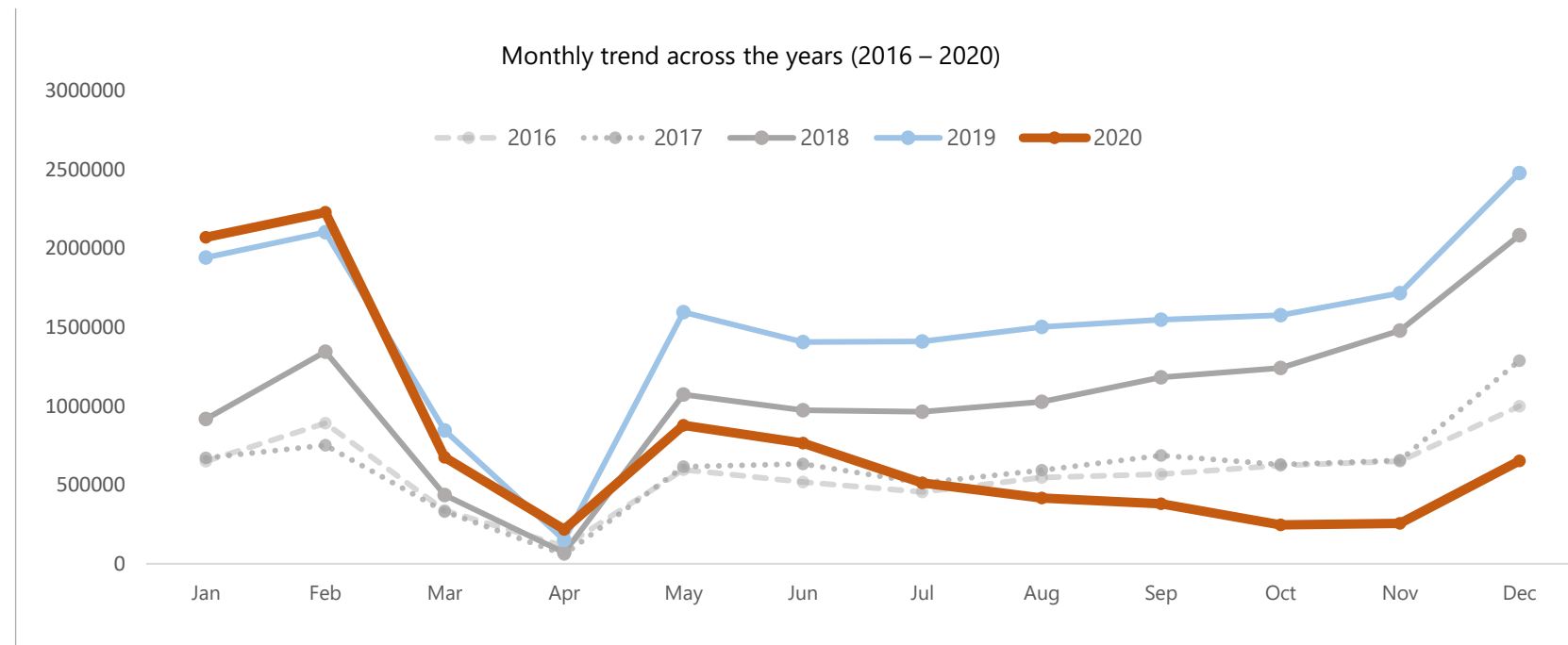
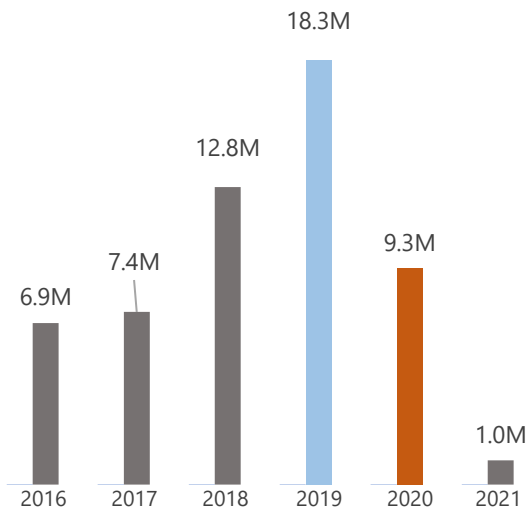
11,887



# Yearly Trend

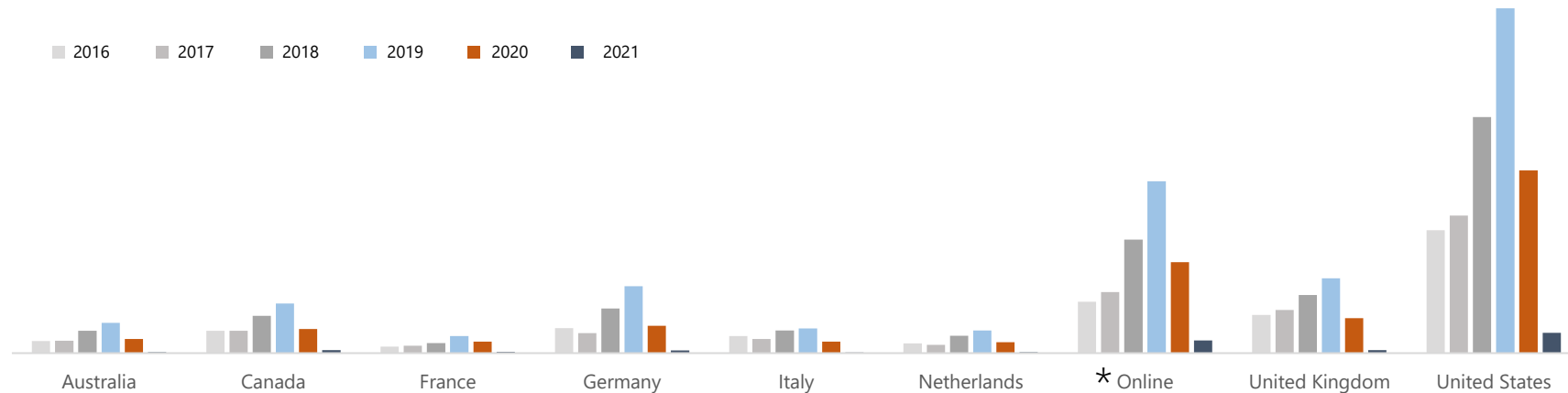
- Usually sales in a years starts strong in Jan & Feb, drops in March and April and then picks ups
- 2020 sales started strong however after April, the sales dropped much lower than previous years; Poor sales flowing into 2021 as well.
  - Drop in revenue, is mostly due to a drop in customers of ~50%, since other metrics are almost similar when comparing 2019 & 2020, Basket size basket value and average value of products purchased are almost similar
  - Saw a small shift in category % contribution across all months from May to Dec; % contribution of Home Appliances category decreased in all of them

Massive drop (50% YoY degrowth) in Revenue in **2020**.



# Country level analysis

- Drop in revenue in 2020 seen in all countries
- Every year top 3 countries are US, "Online", UK, Germany
- Australia – a lot of products purchased were of high value
- France is doing very well from a Revenue per Sq meter store area



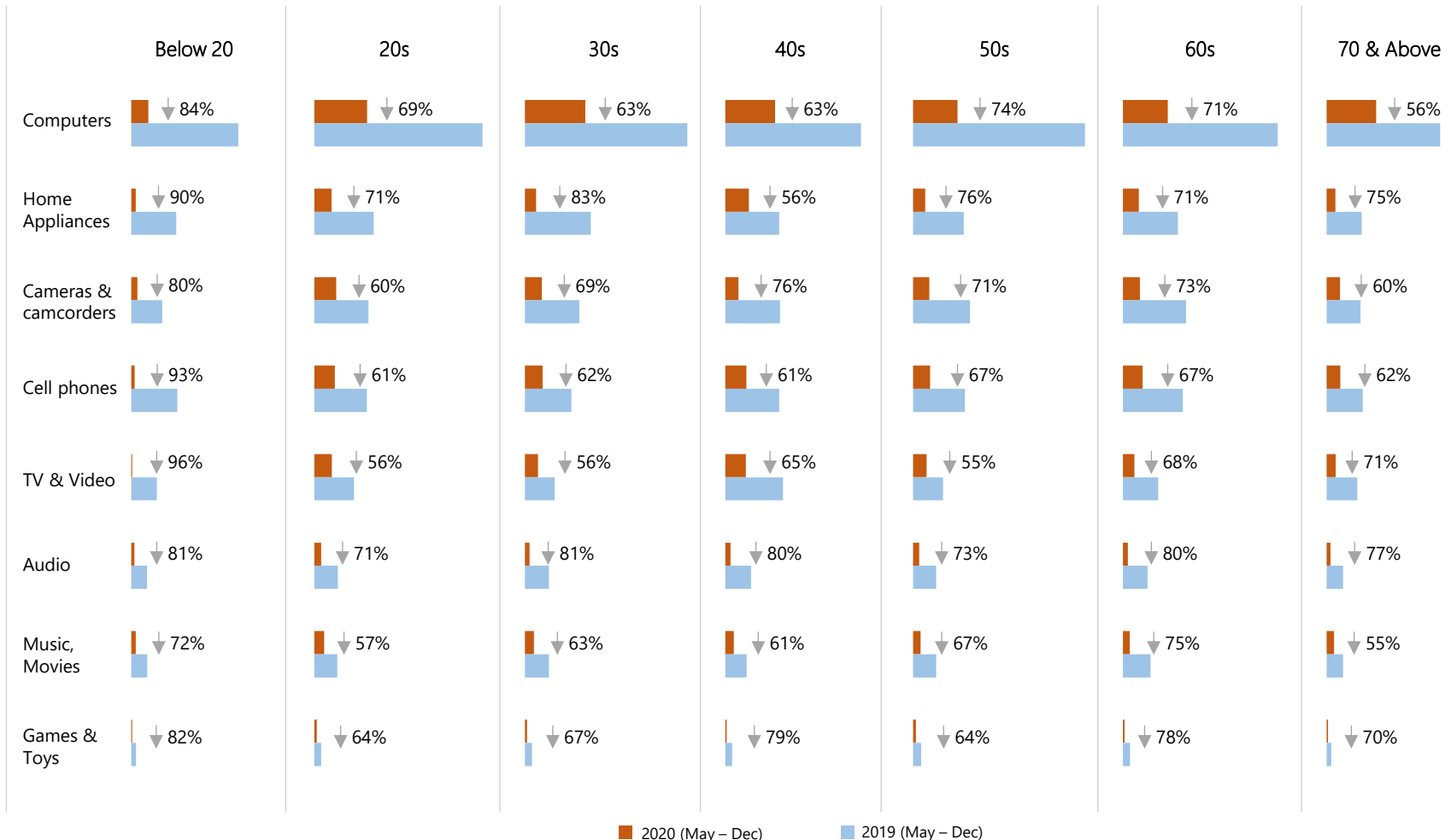
Country	Revenue	Cost	%Margin	Stores	Customers	Orders	Quantity	Products	AvgValue	BasketValue	BasketSize	Store Area (sq meters)	Revenue / Area
United States	23.8M	9.8M	141%	20	5.2K	11.2K	83.6K	2.4K	284	2,131	7.5	43.5M	0.55
Online	11.4M	4.7M	141%	1	4.5K	5.6K	41.3K	2.2K	276	2,044	7.4	-	-
United Kingdom	5.8M	2.4M	140%	7	1.4K	2.8K	20.6K	1.9K	279	2,065	7.4	11.8M	0.49
Germany	4.2M	1.8M	143%	8	1K	1.9K	14.9K	1.6K	285	2,233	7.8	7.2M	0.59
Canada	3.6M	1.5M	140%	3	1K	1.8K	12.99K	1.6K	278	2,042	7.3	6.8M	0.53
Australia	2.1M	0.86M	<b>145%</b>	5	0.7K	901	7.1K	1.2K	<b>296</b>	<b>2,330</b>	<b>7.9</b>	4.1M	0.52
Italy	2.1M	0.85M	142%	3	475	890	6.98K	1.2K	295	2,314	7.8	3.3M	0.62
Netherlands	1.6M	0.65M	143%	4	483	776	5.9K	1K	269	2,051	7.6	2.2M	0.71
France	1.2M	0.5M	144%	7	389	571	4.3K	0.9K	284	2,153	7.6	0.5M	<b>2.57</b>

# Age Group / Customer analysis

- Degrowth in number of customers noticed across all customers age groups, largest degrowth - 50s & 60s age groups
- Huge degrowth across all categories especially Home Appliances; across all age groups Computers category contributes 32%-43% of revenue degrowth

Age Category	Metric	2019	2020	YoY Growth
Below 20	Revenue	0.8M	0.3M	-62%
	#Customers	281	118	-58%
	#Orders	399	138	-65%
	Quantity	2,922	1,051	-64%
20s	Revenue	2.8M	1.4M	-50%
	#Customers	969	596	-38%
	#Orders	1,330	702	-47%
	Quantity	10,326	5,380	-48%
30s	Revenue	2.7M	1.4M	-47%
	#Customers	989	602	-39%
	#Orders	1,353	717	-47%
	Quantity	10,215	5,386	-47%
40s	Revenue	2.7M	1.4M	-50%
	#Customers	963	585	-39%
	#Orders	1,329	697	-48%
	Quantity	9,867	4,865	-51%
50s	Revenue	2.7M	1.3M	-53%
	#Customers	993	562	<b>-43%</b>
	#Orders	1,365	674	-51%
	Quantity	10,183	4,791	-53%
60s	Revenue	2.7M	1.3M	-50%
	#Customers	996	564	<b>-43%</b>
	#Orders	1,379	671	-51%
	Quantity	10,585	4,978	-53%
70 & Above	Revenue	3.9M	2.2M	-43%
	#Customers	1,385	868	-37%
	#Orders	1,928	1,036	-46%
	Quantity	14,342	8,012	-44%

Revenue degrowth across product categories segmented by age groups



# Customer Churn analysis

- 67% of customers identified as churned

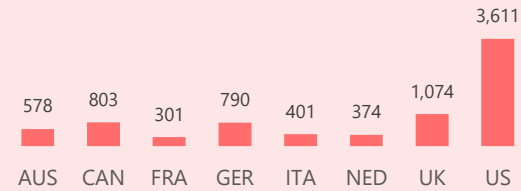
## CHURNED

Customers who fit these conditions

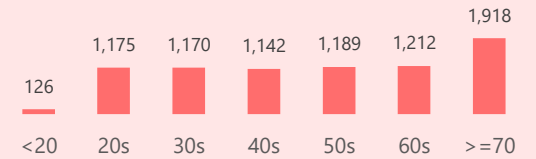
- #days since last purchase > average #days between purchases
- More than a month passed since crossing the average #days between purchases

7,932

### Split by Country



### Split by Age Group

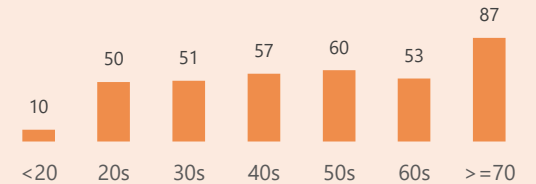
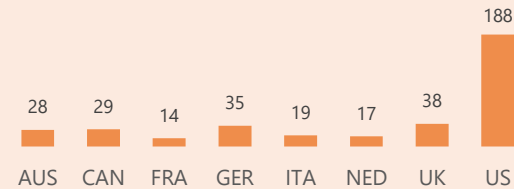


## POTENTIALLY CHURNED

Customers who fit these conditions

- #days since last purchase > average #days between purchases
- Less than a month passed since crossing the average #days between purchases

368

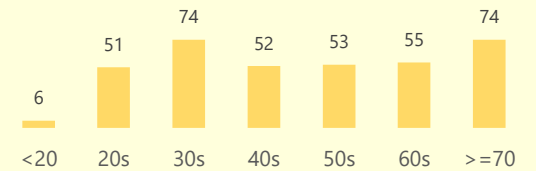
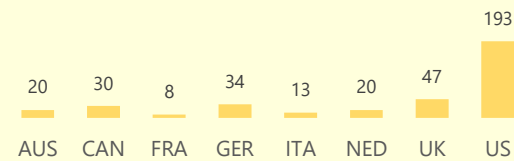


## LIKELY TO CHURN

Customers who fit these conditions

- #days since last purchase <= average #days between purchases
- Less than a month left to reach the average #days between purchases

365

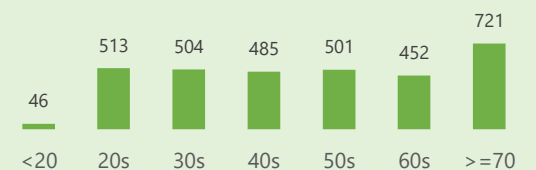
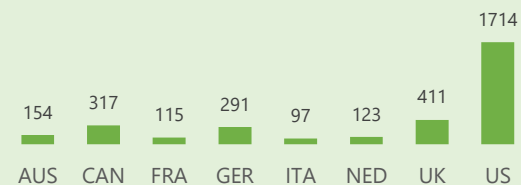


## REGULAR CUSTOMERS

Customers who fit these conditions

- #days since last purchase <= average #days between purchases
- More than a month left to reach the average #days between purchases

3,222



# Store Analysis

- Revenue degrowth seen in all stores; 7.2M USD - YoY decrease in revenue comparing 2019 & 2020 across month May to December
  - % Contribution across countries: US – 53%, UK – 13%, GER – 11%, CAN – 8%, AUS – 5%, ITA – 4%, NED – 4%, FRA – 1%
- % Revenue Contribution of Home Appliances decreased in ~90% of stores
- 16 stores identified with zero activity; 8 stores identified with very low activity, all French stores have very low activity

Stores with very low activity

Country	StoreKey	Open Date	Revenue		#Customers		Orders / Day		Quantity / Day	
			2019	2020	2019	2020	2019	2020	2019	2020
Australia	1	01-01-2008	83,345	59,548	35	26	0.10	0.07	0.81	0.58
France	18	08-08-2012	89,757	21,675	26	15	0.07	0.04	0.62	0.21
France	15	01-01-2015	75,094	41,970	27	14	0.08	0.04	0.69	0.36
France	16	03-06-2010	62,657	54,601	34	25	0.10	0.07	0.62	0.47
France	12	06-06-2012	53,193	54,126	27	21	0.07	0.06	0.69	0.45
France	13	07-06-2013	46,260	37,989	26	18	0.07	0.05	0.56	0.26
France	17	08-07-2007	39,113	34,241	25	15	0.07	0.04	0.65	0.28
France	14	15-12-2009	25,694	19,755	20	10	0.05	0.03	0.23	0.14

Stores with zero activity

Store Key	Last Order Date	Country	State
2	29-04-2016	Australia	Northern Territory
28	27-07-2017	Italy	Caltanissetta
41	08-09-2018	United Kingdom	Fermanagh
20	31-07-2019	Germany	Brandenburg
63	02-11-2019	United States	Utah
27	23-12-2020	Germany	Sachsen-Anhalt
16	31-12-2020	France	Limousin
3		Australia	South Australia
7		Canada	New Brunswick
11		Canada	Yukon
25		Germany	Mecklenburg-Vorpommern
35		Netherlands	Zeeland
46		United States	Delaware
52		United States	Mississippi
58		United States	North Dakota
60		United States	Rhode Island

# Product Analysis

## Top 10 products in 2020



1. Adventure Works Desktop PC2.33 XD233

2. WWI Desktop PC2.33 X330

3. Adventure Works Desktop PC2.30 MD230

4. WWI desktop pc2.30 M2300

5. Adventure Works Desktop PC1.80 ED182

6. Adventure Works 52 LCD HDTV X790W

7. Contoso Water Heater 4.3GPM M1250

8. Proseware Projector 1080p LCD86

9. Adventure Works Desktop PC1.80 ED180

10. Adventure Works 52 LCD HDTV X790W

Change in  
Rank



%  
Contribution

3.3%

3.2%

2.4%

2%

1.9%

1.6%

1.6%

1.5%

1.4%

1.3%

\* Contoso Water Heater 7.2GPM X1800 & Adventure Works Desktop PC1.60 ED160 pushed out of top 10, dropped 5 spots and 9 spots respectively w.r.t 2019 rankings

## Product models with declining sales: classified by concern

● Highly concerning

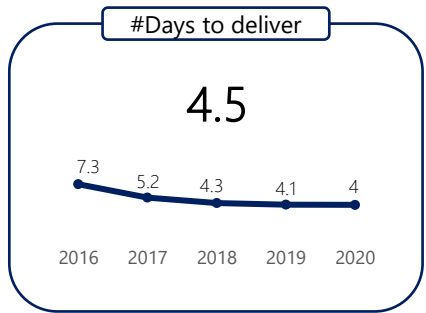
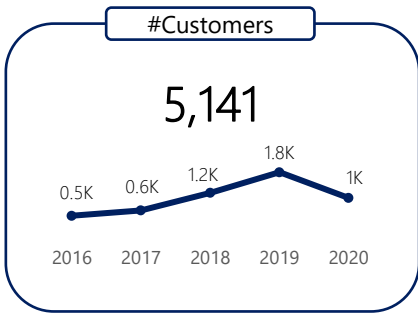
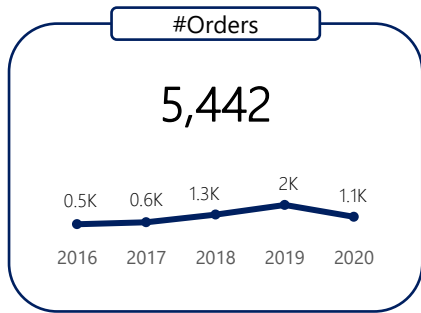
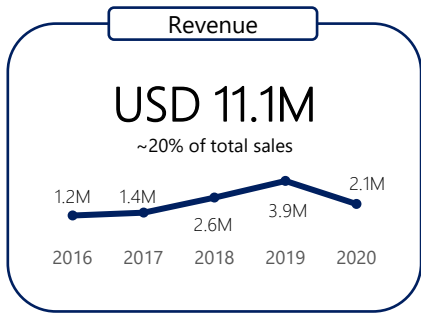
● Medium concerning

Product Model	2016	2017	2018	2019	TREND	Classification
a. datum slr camera m138	5,928	624	4,056	936		●
adventure works chandelier m6150	1,150	2,300	3,220			●
adventure works desk lamp e1200	570		450	210		●
adventure works desk lamp e1300	160		1,439			●
adventure works floor lamp x1150	7,632	4,452	3,816	636		●
contoso washer & dryer 27in l270	45,084	95,472	42,432	15,912		●
fabrikam coffee maker auto 5c e090	5,868	7,661	5,379	1,630		●
fabrikam independent filmmaker 1/3 8.5mm x200			13,770	4,590		●
fabrikam independent filmmaker 2/3 17mm x100			24,320			●
litware 120mm led case fan e901		90	40	20		●
litware 80mm dual ball bearing case fan e1001	85	85	55	40		●
litware home theater system 5.1 channel m514	9,584	599	2,396	1,797		●
litware mobile fan external usb cooling fan e601	493	460	395	132		●
proseware air conditioner 5200btu e100	550	220	330	110		●
proseware chandelier m0815	6,176	4,296	269	269		●
proseware photo inkjet printer m100	1,272	2,385	2,385	318		●
wwi chandelier m615	1,610	3,680	920	460		●
wwi wall lamp e315	1,122	612	510	408		●
adventure works chandelier m8150	1,074	3,222	2,417	1,074		●
adventure works coffee maker auto 10c m100	14,174	26,110	17,158	11,190		●
adventure works coffee maker auto 5c e090	4,890	3,586	3,749	3,260		●
adventure works floor lamp m2150	2,373	7,119	1,356	1,017		●
adventure works laptop19 x1900	22,083	15,588	9,093	10,392		●
contoso air conditioner 12000btu m0640	5,060	10,120	7,360	3,220		●
contoso bluetooth notebook mouse e70	1,050	500	700	600		●
contoso home theater system 2.1 channel e1200	897	4,784	3,289	598		●
contoso microwave 2.2cuft m0126	360	3,420	1,620	180		●
litware 18" oscillating pedestal fan m135	5,600	10,500	5,600	2,800		●
litware home theater system 7.1 channel x711	12,199	13,308	6,654	5,545		●
proseware air conditioner 25000btu l167	13,992	12,084	9,540	10,812		●
sv car video lcd7 m7001	10,528	6,580	5,264	4,935		●

\* 2020 sales not included since it was a down year



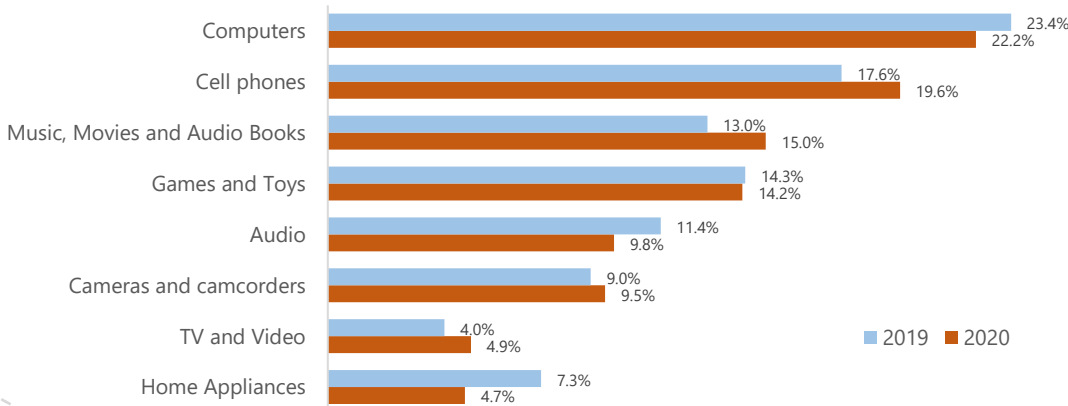
# Online Business Performance



## 2019 vs 2020 Comparison

Country	Revenue			Quantity			#Orders			#Customers		Basket Value		Basket Size	
	2019	2020	YoY Growth	2019	2020	YoY Growth	2019	2020	YoY Growth	2019	2020	2019	2020	2019	2020
US	2.3M	1.1M	-51%	8,690	4,273	-51%	1,144	587	-49%	1043	562	1,998	1,898	7.6	7.3
CAN	0.37M	0.2M	-47%	1,340	658	-51%	181	87	-52%	164	83	2,062	2,272	7.4	7.6
GER	0.36M	0.23M	-35%	1,274	846	-34%	183	118	-36%	172	109	1,941	1,949	7.0	7.2
UK	0.34M	0.21M	-39%	1,382	826	-40%	193	119	-38%	182	115	1,765	1,741	7.2	6.9
AUS	0.2M	0.12M	-41%	700	386	-45%	103	53	-49%	96	51	1,956	2,254	6.8	7.3
ITA	0.15M	0.05M	-68%	551	193	-65%	77	30	-61%	70	30	1,896	1,546	7.2	6.4
NED	0.12M	0.09M	-23%	535	294	-45%	79	45	-43%	72	43	1,555	2,093	6.8	6.5
FRA	0.08M	0.06M	-27%	333	242	-27%	46	32	-30%	42	32	1,809	1,901	7.2	7.6

## %contribution across product categories



## Top 10 products in 2020

Rank	ProductModel	Change in Rank
1	wwi desktop pc2.33 x2330	
2	proseware projector 1080p lcd86	▲ 8
3	adventure works desktop pc2.30 md230	
4	adventure works desktop pc2.33 xd233	▼ 2
5	fabrikam refrigerator 24.7cuft x9800	▲ 7
6	wwi desktop pc2.30 m2300	▲ 2
7	contoso water heater 4.0gpm m1250	▲ 7
8	adventure works desktop pc1.80 ed182	▲ 1
9	adventure works 37 1080p lcd hdtv m150w	▲ 15
10	adventure works 52 lcd hdtv x590	▼ 5