

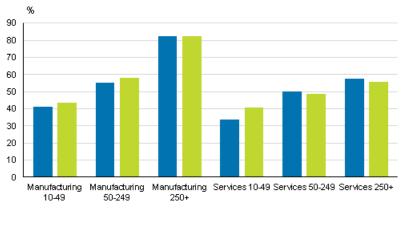
Innovation 2014

Preliminary release

Product and process innovation picking-up, digitalisation boosting business activity?

According to Statistics Finland's preliminary data, enterprises reported innovation activity related to products and processes more often in 2012 to 2014 than in the years preceding the survey period. Implementation of innovations grew especially among small service companies compared to the previous survey.

Implementation or product and process innovations in manufacturing and services by the size category of the enterprise in 2010 to 2012 and 2012 to 2014, share of enterprises



■Product or process innovations 2010-2012 ■Product or process innovations 2012-2014

Nearly one-half, 48 per cent of the surveyed enterprises reported innovation activities related to products and processes and a majority of them, 45 per cent of all enterprises, also reported they had introduced product or process innovations. The share of enterprises that reported innovation activities increased by a few percentage points from the previous surveys.

In 2012 to 2014, altogether 38 per cent of manufacturing enterprises and 32 per cent of service industry enterprises introduced product innovations to the markets. In turn, good one-third of the surveyed manufacturing enterprises and 29 per cent of the surveyed service industry enterprises introduced process innovations.

By contrast, the prevalence of organisation and marketing innovations, 38 per cent, remained on level with previous years in terms of the overall picture.

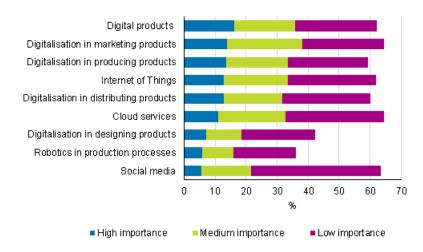
Customers and product users can be a considerable resource for enterprises' innovation activities. As product users, corporate customers are more often visible as participants in the innovation than private consumers. Of all enterprises with innovation activity, around one-fifth, 22 per cent, viewed the importance of development work in cooperation with corporate users of their products as high or moderate. Around one in ten of enterprises with innovation activity, viewed development work with consumers as important (high or moderate importance).

One-fifth felt that products processed by corporate users were important in their innovation activity and in the production of innovative products. The corresponding result for products modified by consumers was nine per cent. New products developed by consumers played an important role for six per cent of enterprises with innovation activity, and around one in ten felt that new products developed by enterprises played an important role in their development activity.

The innovation survey also studied now for the first time the importance of digitalisation in enterprises' business activities and in the light of the preliminary results, digitalisation can be estimated to have a significant effect on enterprises' activities. Close on one-half of services industry enterprises estimated the importance of digital products as high or moderate, and 45 per cent felt, for example, that digitalisation was significant in the marketing of their products. The respective proportions in manufacturing were 22 and 30 per cent.

Around one-third of all enterprises estimated that the role of cloud services, the Internet of things and digitalisation in the production of their products, as well as in the distribution of products, is important. These were seen as important in the business activities of service industry enterprises more often than among manufacturing enterprises. By contrast, the utilisation of robotics is naturally more common among manufacturing enterprises than in service industry enterprises. Fourteen per cent of manufacturing enterprises considered digitalisation to be important in design and 22 per cent of service industry enterprises. Good one-fifth of all enterprises felt that the role of social media was high or considerable, the importance being higher for services than manufacturing.

The importance of digitalisation in enterprises' business activities in 2012 to 2014, share of enterprises



The survey results will be published in full in June 2016.

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Appendix table 1. Prevalence of innovation activity relating to products and processes by size category of personnel, 2012-2014, share of enterprises

Industry	Size category of personnel	Product innovations (goods and services)	Process innovations	Product or process innovations	Innovation projects	Innovation activity	All elements
		%	%	%	%	%	%
All NACE -	10-49	30.9	28.9	41.9	25.8	44.6	12.8
Total	50-249	43.3	40.4	53.9	40.3	58.5	23.2
	250-	64.6	55.1	70.5	59.7	73.3	43.7
	Total	34.5	32.0	45.2	29.8	48.3	16.0
Manufacturing	10-49	31.4	31.1	43.3	28.4	46.2	14.2
	50-249	48.5	43.4	58.1	49.4	63.4	27.3
	250-	79.1	63.5	82.3	74.4	84.8	56.1
	Total	37.7	35.5	48.6	35.4	52.0	19.3
Services	10-49	30.6	27.2	40.9	23.9	43.4	11.8
	50-249	36.9	36.8	48.7	29.4	52.5	18.3
	250-	46.5	44.6	55.7	41.2	58.9	28.1
	Total	32.0	29.2	42.5	25.3	45.3	13.3

Appendix table 2. Prevalence of innovation activity relating to products and processes by industry, 2012-2014, share of enterprises

Industry	Product innovations (goods and services)	Process innovations	Product or process innovations	Innovation projects	Innovation activity	All elements
	%	%	%	%	%	%
05-09 Mining and quarrying	7.2	6.1	10.4	9.3	12.5	2.9
10-12 Food products and beverages	43.4	30.1	47.6	25.5	49.5	17.0
13 Textiles	55.8	73.7	76.5	58.6	76.5	37.9
14 Wearing apparel	45.6	25.4	50.8	30.5	50.8	12.1
15 Leather and related products	15.8	15.8	21.1	15.8	21.1	5.3
16 Wood, products of wood, and cork	33.2	39.3	45.5	36.3	49.6	22.9
17 Paper and paper products	52.7	56.0	66.0	50.5	67.4	35.5
18 Printing and reproduction of recorded media	12.4	28.4	29.1	33.1	42.6	8.5
19-21 Chemicals and chemical products	63.2	50.2	71.7	62.0	81.5	32.1
22 Rubber and plastic products	54.3	42.9	60.2	40.8	61.2	24.5
23 Other non-metallic mineral products	33.5	30.7	45.6	34.9	51.2	17.2
24 Basic metals	28.1	39.6	50.7	33.2	53.8	17.0
25 Fabricated metal products, except machinery and equipment	30.1	37.6	44.4	27.5	46.4	18.9
26 Computer, electronic and optical products	68.5	43.2	74.5	62.0	78.2	36.3
27 Electrical equipment	51.1	30.1	60.9	56.0	67.3	18.8
28 Machinery and equipment n.e.c.	59.5	48.0	68.2	52.9	72.3	29.9
29 Motor vehicles, trailers and semi-trailers	27.0	32.6	37.8	34.3	39.1	19.4

Industry	Product innovations (goods and services)	Process innovations	Product or process innovations	Innovation projects	Innovation activity	All elements
	%	%	%	%	%	%
30 Other transport equipment	34.4	29.3	34.4	26.9	34.4	26.9
31 Furniture	38.4	26.7	44.5	32.9	47.1	15.9
32 Other manufacturing	47.2	30.6	52.4	52.4	52.4	25.3
33 Repair and installation of machinery and equipment	15.2	17.7	28.3	16.6	33.1	1.3
35 Electricity, gas, steam and air conditioning supply	18.2	31.1	38.1	26.7	43.4	8.0
36 Water collection, treatment and supply	2.6	15.4	15.4	9.2	15.4	2.6
37-39 Sewerage, waste treatment	12.4	25.8	31.9	16.9	31.9	3.3
46 Wholesale trade, except of motor vehicles and motorcycles	34.3	25.6	43.9	21.3	45.8	9.6
49-52 Transportation and storage	13.6	23.2	26.0	11.7	27.9	5.6
53 Postal and courier activities	7.8	32.2	32.2	16.5	32.2	7.8
58 Publishing activities	45.7	32.4	48.5	29.6	48.5	23.4
59 Programme production, sound recording and music publishing activities	5.8	15.9	17.8	3.9	17.8	1.9
60 Programming and broadcasting activities	26.2	26.2	26.2	26.2	26.2	26.2
61 Telecommunications	40.0	35.6	50.5	61.2	68.7	25.0
62 Computer programming, consultancy and related activities	64.5	48.8	71.7	55.7	75.4	35.5
63 Information service activities	53.6	32.7	65.6	41.8	65.6	17.8
64 Financial service activities	29.8	20.4	37.5	5.8	37.5	4.9
65 Insurance, reinsurance and pension funding	26.1	29.9	42.7	47.9	55.0	13.3
66 Activities auxiliary to financial services and insurance activities	57.0	49.1	58.9	58.9	70.6	39.3
71 Architectural and engineering activities; technical testing and analysis	30.6	30.0	43.9	27.1	47.4	12.3
72 Scientific research and development	44.2	40.4	56.9	51.6	67.6	17.1
73 Advertising and market research	34.6	31.2	46.7	33.2	50.2	16.6
All NACE - Total	34.5	32.0	45.2	29.8	48.3	16.0
05-39 Manufacturing, total	37.7	35.5	48.6	35.4	52.0	19.3
46, 49-53, 58-66, 71-73 Services, total	32.0	29.2	42.5	25.3	45.3	13.3

Appendix table 3. Prevalence of marketing and organisational innovations by size category of personnel, 2012-2014, share of enterprises

Industry	Size category of personnel	Organisational innovations	Marketing innovations	Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
		%	%	%	%	%	%
All NACE -	10-49	26.1	23.9	34.8	50.3	51.6	6.4
Total	50-249	39.5	30.1	48.1	63.3	65.6	12.5
	250-	55.3	46.3	63.9	77.4	79.1	30.5
	Total	29.7	25.9	38.4	53.8	55.3	8.5
Manufacturing	10-49	26.6	22.6	35.4	51.9	53.4	6.5
	50-249	38.1	30.7	48.5	65.7	68.5	12.8
	250-	62.9	53.4	72.4	85.0	86.5	38.6
	Total	31.1	26.0	40.2	56.7	58.4	9.6
Services	10-49	25.7	24.7	34.4	49.2	50.4	6.2
	50-249	41.3	29.3	47.6	60.4	62.2	12.2
	250-	45.8	37.5	53.3	68.0	69.9	20.4
	Total	28.7	25.8	37.0	51.4	52.8	7.6

Appendix table 4. Prevalence of marketing and organisational innovations by industry, 2012-2014, share of enterprises

Industry	Organisational innovations		Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
	%	%	%	%	%	%
05-09 Mining and quarrying	16.1	7.5	16.1	19.0	21.1	2.9
10-12 Food products and beverages	25.8	33.1	43.4	57.4	57.4	10.0
13 Textiles	61.4	55.8	86.9	86.9	86.9	15.2
14 Wearing apparel	34.9	29.2	37.4	50.8	50.8	12.1
15 Leather and related products	5.3	5.3	10.5	21.1	21.1	0.0
16 Wood, products of wood, and cork		21.9	28.0	50.7	52.7	9.5
17 Paper and paper products	30.5	42.7	45.5	66.0	67.4	20.5
18 Printing and reproduction of recorded media	31.2	23.2	37.5	46.5	52.9	5.4
19-21 Chemicals and chemical products	23.0	25.8	32.5	74.5	81.5	11.3
22 Rubber and plastic products	30.2	17.7	37.4	62.2	62.2	6.8
23 Other non-metallic mineral products	25.0	25.1	33.7	52.0	57.6	7.9
24 Basic metals	20.1	18.8	31.9	52.7	55.8	7.0
25 Fabricated metal products, except machinery and equipment		22.0	40.5	56.3	57.7	9.5
26 Computer, electronic and optical products	49.1	61.0	77.3	87.5	88.3	17.9
27 Electrical equipment	45.8	40.0	56.2	70.6	72.2	15.0
28 Machinery and equipment n.e.c.	40.1	34.8	50.3	71.6	74.0	14.7
29 Motor vehicles, trailers and semi-trailers	20.1	23.2	26.0	39.1	39.1	13.5
30 Other transport equipment	27.5	28.9	36.4	43.9	43.9	20.0
31 Furniture	33.9	24.1	35.5	55.9	55.9	10.4
32 Other manufacturing	28.0	35.8	41.5	58.1	58.1	11.4
33 Repair and installation of machinery and equipment	19.0	10.5	26.3	35.5	37.9	0.0
35 Electricity, gas, steam and air conditioning supply	32.4	20.2	43.5	51.0	53.1	3.5
36 Water collection, treatment and supply	18.9	0.0	18.9	21.9	21.9	0.0
37-39 Sewerage, waste treatment	26.5	4.4	26.5	40.2	40.2	0.0
46 Wholesale trade, except of motor vehicles and motorcycles	27.6	34.1	41.5	54.4	55.1	6.6
49-52 Transportation and storage	13.1	9.3	16.7	30.9	32.3	2.5
53 Postal and courier activities	16.5	7.8	16.5	32.2	32.2	7.8
58 Publishing activities	32.3	37.6	39.6	57.1	57.1	16.0
59 Programme production, sound recording and music publishing activities	17.8	21.9	23.9	37.8	37.8	0.0
60 Programming and broadcasting activities	39.3	39.3	39.3	39.3	39.3	26.2
61 Telecommunications	37.7	32.8	43.0	63.2	71.0	22.5

Industry	Organisational innovations	Marketing innovations	Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
	%	%	%	%	%	%
62 Computer programming, consultancy and related activities	50.5	42.1	60.7	79.3	81.1	20.5
63 Information service activities	37.5	41.8	58.4	73.3	73.3	0.0
64 Financial service activities	28.0	22.2	32.6	48.2	48.2	2.7
65 Insurance, reinsurance and pension funding	37.0	35.1	49.8	58.8	69.2	9.5
66 Activities auxiliary to financial services and insurance activities	52.9	34.1	54.9	78.5	80.4	14.5
71 Architectural and engineering activities; technical testing and analysis	34.7	20.6	41.2	53.1	55.0	4.9
72 Scientific research and development	35.1	26.6	40.4	67.6	72.9	3.2
73 Advertising and market research	41.5	34.2	51.2	61.9	61.9	14.2
All NACE - Total	29.7	25.9	38.4	53.8	55.3	8.5
05-39 Manufacturing, total	31.1	26.0	40.2	56.7	58.4	9.6
46, 49-53, 58-66, 71-73 Services, total	28.7	25.8	37.0	51.4	52.8	7.6

Appendix table 5. The importance of digitalisation for enterprise's business activity 2012-2014, share of enterprises

Industry		High	Medium	Low	Not relevant
		%	%	%	%
All NACE -	Importance of digital products for enterprise's business activity	16.3	19.6	26.2	37.9
Total	Importance of cloud services for enterprise's business activity	10.9	21.7	31.9	35.5
	Importance of social media for enterprise's business activity	5.5	16.2	41.8	36.5
	Importance of the Internet of Things for enterprise's business activity	12.9	20.5	28.4	38.1
	Utilisation of robotics in production processes	5.8	10.2	20.0	64.1
	Importance of digitalisation in producing products	13.5	20.1	25.8	40.7
	Importance of digitalisation in designing products	7.0	11.6	23.7	57.7
	Importance of digitalisation in marketing products	13.8	24.4	26.4	35.5
	Importance of digitalisation in distributing products	12.9	18.9	28.4	39.9
Manufacturing	Importance of digital products for enterprise's business activity	6.0	16.3	31.3	46.3
	Importance of cloud services for enterprise's business activity	5.2	18.1	36.1	40.5
	Importance of social media for enterprise's business activity	2.8	12.5	43.0	41.6
	Importance of the Internet of Things for enterprise's business activity	9.0	19.0	30.3	41.7
	Utilisation of robotics in production processes	9.9	15.6	25.8	48.7
	Importance of digitalisation in producing products	6.5	17.2	32.5	43.7
	Importance of digitalisation in designing products	3.9	10.1	29.5	56.5
	Importance of digitalisation in marketing products	6.8	22.9	30.9	39.4
	Importance of digitalisation in distributing products	3.9	17.1	35.3	43.7
Services	Importance of digital products for enterprise's business activity	24.6	22.2	22.1	31.1
	Importance of cloud services for enterprise's business activity	15.4	24.6	28.5	31.5
	Importance of social media for enterprise's business activity	7.6	19.1	40.8	32.4
	Importance of the Internet of Things for enterprise's business activity	16.0	21.8	26.9	35.3
	Utilisation of robotics in production processes	2.5	5.8	15.3	76.4
	Importance of digitalisation in producing products	19.0	22.3	20.4	38.2
	Importance of digitalisation in designing products	9.4	12.9	19.0	58.7
	Importance of digitalisation in marketing products	19.3	25.6	22.8	32.3
	Importance of digitalisation in distributing products	20.1	20.3	22.8	36.8

Appendix table 6. Share of enterprises with innovation activity, who estimated user innovation to be of high or medium importance in 2012 to 2014, by size category of personnel

Industry		Joint brainsto development production w	and content	products (enteresponsible fo		Users have developed new products (enterprise responsible for production and launching on the market)		
		High importance	Medium importance	High importance	Medium importance	High importance	Medium importance	
		%	%	%	%	%	%	
Other enterpris	es as cu	stomers and p	roduct users					
All NACE	10-49	5.3	14.3	4.7	14.5	2.8	8.3	
	50-249	6.5	20.2	4.8	16.7	3.4	7.6	
	250-	10.4	22.0	5.0	23.3	2.2	6.1	
	Total	5.9	16.0	4.8	15.5	2.9	8.0	
Manufacturing	10-49	2.3	13.5	3.3	15.5	2.7	9.5	
	50-249	5.3	21.0	3.6	16.7	2.5	9.2	
	250-	12.1	18.6	5.3	25.1	2.0	5.1	
	Total	3.9	15.8	3.6	16.6	2.6	9.1	
Services	10-49	7.5	14.8	5.8	13.8	2.9	7.3	
	50-249	8.2	19.1	6.3	16.6	4.7	5.4	
	250-	7.8	27.3	4.6	20.4	2.3	7.7	
	Total	7.7	16.1	5.8	14.6	3.2	7.0	
End product us	ers, i.e.	consumers as	customers and	product users				
All NACE	10-49	2.0	7.6	1.6	7.1	1.3	5.0	
	50-249	2.4	9.2	2.8	5.9	1.6	4.0	
	250-	5.0	11.9	1.8	7.7	0.3	5.4	
	Total	2.3	8.2	1.8	6.9	1.3	4.8	
Manufacturing	10-49	1.8	6.6	0.5	8.9	1.1	6.1	
	50-249	1.6	10.2	1.8	6.4	0.9	5.1	
	250-	5.3	9.7	2.3	7.3	0.6	3.0	
	Total	2.0	7.8	1.0	8.2	1.0	5.6	
Services	10-49	2.2	8.4	2.4	5.7	1.4	4.2	
	50-249	3.5	7.8	4.1	5.2	2.7	2.4	
	250-	4.4	15.4	0.9	8.3	0.0	9.2	
	Total	2.5	8.6	2.6	5.7	1.5	4.1	

Appendix table 7. Share of enterprises with innovation activit, who estimated user innovation to be of high or medium importance in 2012 to 2014 by industry

Industry	developmen	evelopment and content exist coduction with users (ente prod on the		ers have modified isting products atterprise responsible for oduction and launching the market)		developed ts (enterprise for and launching et)
	High importance	-	High importance	Medium importance	-	Medium importance
	%	%	%	%	%	%
Other enterprises as customers ar	_		ı		I	I
05-09 Mining and quarrying	7.6	0.0	0.0	7.6	0.0	0.0
10-11 Food products and beverages	3.2	17.6	1.0	19.9	4.7	4.5
13-15 Textile, clothing, leather and footwear industry	1.7	22.8	6.9	29.7	5.3	17.6
16-18 Wood and paper industry	5.4	20.6	2.7	18.1	2.7	8.4
19-22 Chemical industry	2.2	17.5	4.4	23.6	4.1	14.4
24-25, 28-30 Metal and engineering industry	3.0	15.5	4.7	15.6	2.3	9.6
26-27 Electrical and electronics industry	11.0	13.2	3.6	12.9	2.2	7.8
23, 31-33 Other manufacturing	3.2	13.5	3.2	16.6	1.6	9.7
35-39 Energy and waste management	0.9	11.3	0.0	4.3	0.0	3.5
46 Wholesale trade, except of motor vehicles and motorcycles	3.0	9.7	3.7	7.9	2.2	5.0
49-53 Transportation and storage	1.1	9.8	2.2	6.4	2.5	3.6
58 Publishing activities	16.7	37.6	9.1	35.8	6.7	15.3
59-60 Programme production and publishing, programming and broadcasting	0.0	23.1	0.0	17.5	0.0	13.2
61 Telecommunications	14.2	22.3	6.8	13.2	3.2	7.4
62 Computer programming, consultancy and related activities	20.2	30.0	17.6	21.5	7.3	9.4
63 Information service activities	20.3	24.3	0.0	65.2	0.0	20.3
64-66 Financial and insurance activities	0.9	12.8	3.1	12.5	1.7	7.0
71 Architectural and engineering activities; technical testing and analysis	8.2	10.1	1.9	14.9	1.6	3.8
72 Scientific research and development	2.9	39.4	2.9	14.6	0.0	7.3
73 Advertising and market research	11.8	13.4	3.9	26.8	3.9	17.3
Manufacturing, total	3.9	15.8	3.6	16.6	2.6	9.1
Services, total	7.7	16.1	5.8	14.6	3.2	7.0
All NACE - Total	5.9	16.0	4.8	15.5	2.9	8.0
End product users, i.e. consumers	as custome	rs and produc	t users			
05-09 Mining and quarrying	0.0	0.0	0.0	0.0	0.0	0.0
10-11 Food products and beverages	1.5	15.6	1.0	5.4	3.2	5.9
13-15 Textile, clothing, leather and footwear industry	0.0	8.9	1.7	15.9	0.0	26.5
16-18 Wood and paper industry	1.5	15.2	2.0	10.7	0.0	10.7
19-22 Chemical industry	4.7	12.3	2.1	12.1	1.8	8.9
24-25, 28-30 Metal and engineering industry	2.3	2.7	0.6	7.5	0.7	3.7

Industry	developmen	Joint brainstorming, development and content production with users		modified ducts esponsible for and launching et)		
	High importance	Medium importance	High importance	Medium importance	High importance	Medium importance
	%	%	%	%	%	%
26-27 Electrical and electronics industry	0.0	11.3	0.0	4.9	0.9	3.5
23, 31-33 Other manufacturing	3.2	4.5	1.6	10.4	1.6	2.7
35-39 Energy and waste management	0.0	7.8	0.0	3.5	0.0	3.5
46 Wholesale trade, except of motor vehicles and motorcycles	0.7	4.8	2.6	2.9	0.0	3.3
49-53 Transportation and storage	0.2	2.2	0.0	1.7	2.2	1.3
58 Publishing activities	9.5	25.9	7.3	15.8	2.4	11.0
59-60 Programme production and publishing, programming and broadcasting	5.6	13.2	0.0	13.2	0.0	13.2
61 Telecommunications	7.4	11.0	0.0	7.4	0.0	7.4
62 Computer programming, consultancy and related activities	5.7	14.1	5.7	10.9	4.0	6.1
63 Information service activities	0.0	8.2	0.0	8.2	0.0	8.2
64-66 Financial and insurance activities	2.7	10.1	1.8	11.1	1.4	7.3
71 Architectural and engineering activities; technical testing and analysis	3.2	4.7	3.2	0.3	1.6	0.3
72 Scientific research and development	0.0	29.2	0.0	7.3	0.0	7.3
73 Advertising and market research	0.0	17.3	0.0	9.5	0.0	3.9
Manufacturing, total	2.0	7.8	1.0	8.2	1.0	5.6
Services, total	2.5	8.6	2.6	5.7	1.5	4.1
All NACE - Total	2.3	8.2	1.8	6.9	1.3	4.8



Suomen virallinen tilasto Finlands officiella statistik Official Statistics of Finland

Science, Technology and Information Society 2016

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Source: Innovation 2014, Statistics Finland