

Presentation for the Agency for Electronic Communications of the Republic of Macedonia (AEC)

Presentation of the margin squeeze test model

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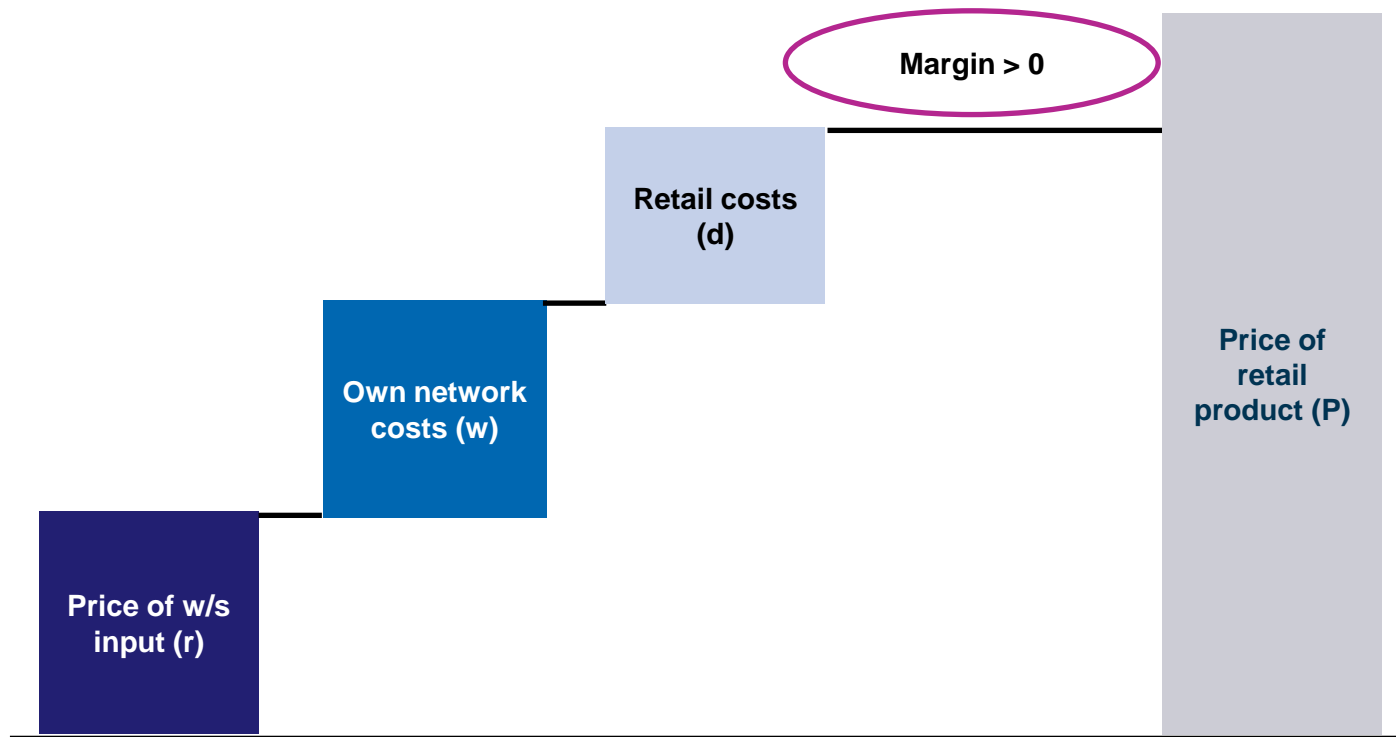
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Analysys Mason and Grant Thornton have been commissioned to implement a price-control mechanisms using a margin squeeze test

Example of a replicable product



The main objective of this presentation is to discuss the implementation of the methodology developed to regulate the retail prices of the services offered by Makedonski Telekom (MakTel)

The margin squeeze test model manages access and voice offers as well as offers including broadband and IPTV bundled with voice services

- The principal objective of this study is to develop and implement a margin squeeze test model to regulate the retail prices of the services offered by MakTel in the market for access, publicly available telephone network services at a fixed location:
 - the test model is able to manage also offers including broadband and IPTV services bundled with voice services

Retail and wholesale services

Market	Retail services	Wholesale services
Access	<ul style="list-style-type: none"> ▪ Access to the public switched telephone network (PSTN) ▪ Integrated services digital network (ISDN) primary rate access (PRA) ▪ ISDN basic rate access (BRA) ▪ Fibre to the home (FTTH) 	<ul style="list-style-type: none"> ▪ Local loop unbundling (LLU) ▪ Wholesale line rental (WLR) ▪ Wholesale bitstream access (WBA) ▪ FTTH
Voice	<ul style="list-style-type: none"> ▪ Local/national calls (on-net, off-net) ▪ Calls to mobile networks ▪ International calls 	<ul style="list-style-type: none"> ▪ Call termination cost ▪ Origination (carrier pre-selection) ▪ Telephone interconnection link
Broadband	<ul style="list-style-type: none"> ▪ Internet traffic 	<ul style="list-style-type: none"> ▪ Broadband access link ▪ Wholesale leased lines
IPTV	<ul style="list-style-type: none"> ▪ IPTV packages (both basic and additional ones) ▪ On-demand contents 	<ul style="list-style-type: none"> ▪ Wholesale IPTV content ▪ Wholesale on-demand content

There are a number of methodological issues associated with margin-squeeze models

<i>Item</i>	<i>Feature</i>	<i>Description</i>	<i>Feature</i>	<i>Description</i>
Level of efficiency of the operator	Equally efficient operator (EEO) test	The lack of margin squeeze is demonstrated by showing that the dominant operator's retail operations could trade profitably on the basis of the upstream price charged to its competitors	Hypothetical reasonably efficient operator (REO) test	It aims at showing that the margin between wholesale and retail prices allows a reasonably efficient provider, with low economies of scale and scope, to obtain a normal profit
Downstream cost standard	Fully allocated cost (FAC)	Both activity-specific and common costs are allocated to the various services, using fully allocated costs	Long-run incremental cost (LRIC)	The margin-squeeze analysis uses the product-specific costs associated with the total volume of output of the relevant product
Test for evaluating profitability over time	Discounted cashflow	It assesses the overall profitability over an adequate period (in general several years), typically achieving a single measure (net present value or NPV)	Period-by-period approach	This approach consists of comparing the observed revenues and retail costs extracted from the accounts on an annual basis, amortising expenditures
Level of aggregation of products	Product by product	The margin squeeze is tested on a product-by-product basis	Aggregation of all products	The margin squeeze is tested at an aggregated level, i.e. on the basis of the overall mix of services
Upstream input	Subset of wholesale products	The margin-squeeze analysis is performed for a subset of wholesale products	Mix of wholesale products	The margin-squeeze analysis is performed for a mix of wholesale products

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Introduction to the margin squeeze test model

- The margin squeeze test model comprises three distinct modules:
 - **Control and revenues** – This module allows to monitor the model results as well as monitoring and managing all inputs and calculations related to revenues (i.e. the P component of the margin squeeze test formula)
 - moreover, it includes all the key switches and parameters to run the different scenarios the model is capable to manage
 - **Costs** – This module allows to monitor and manage all inputs and calculations related to costs (i.e. the r , w , and d components of the margin squeeze test formula)
- The file **Voice Services** manages instead the different call types as stand-alone products
- In the model, sheet labels have different colours:
 - **red**: control and results (used only for the *CTRL* sheet)
 - **orange**: intermediate results (*RES-xxx*)
 - **purple**: revenue and cost calculation sheets (*CALC-xxx*)
 - **pale green**: intermediate calculations (*IN-CALC xxx*)
 - **dark green**: inputs (*IN-xxx*)

Model files

Documents library
4. Inclusion of new retail offers

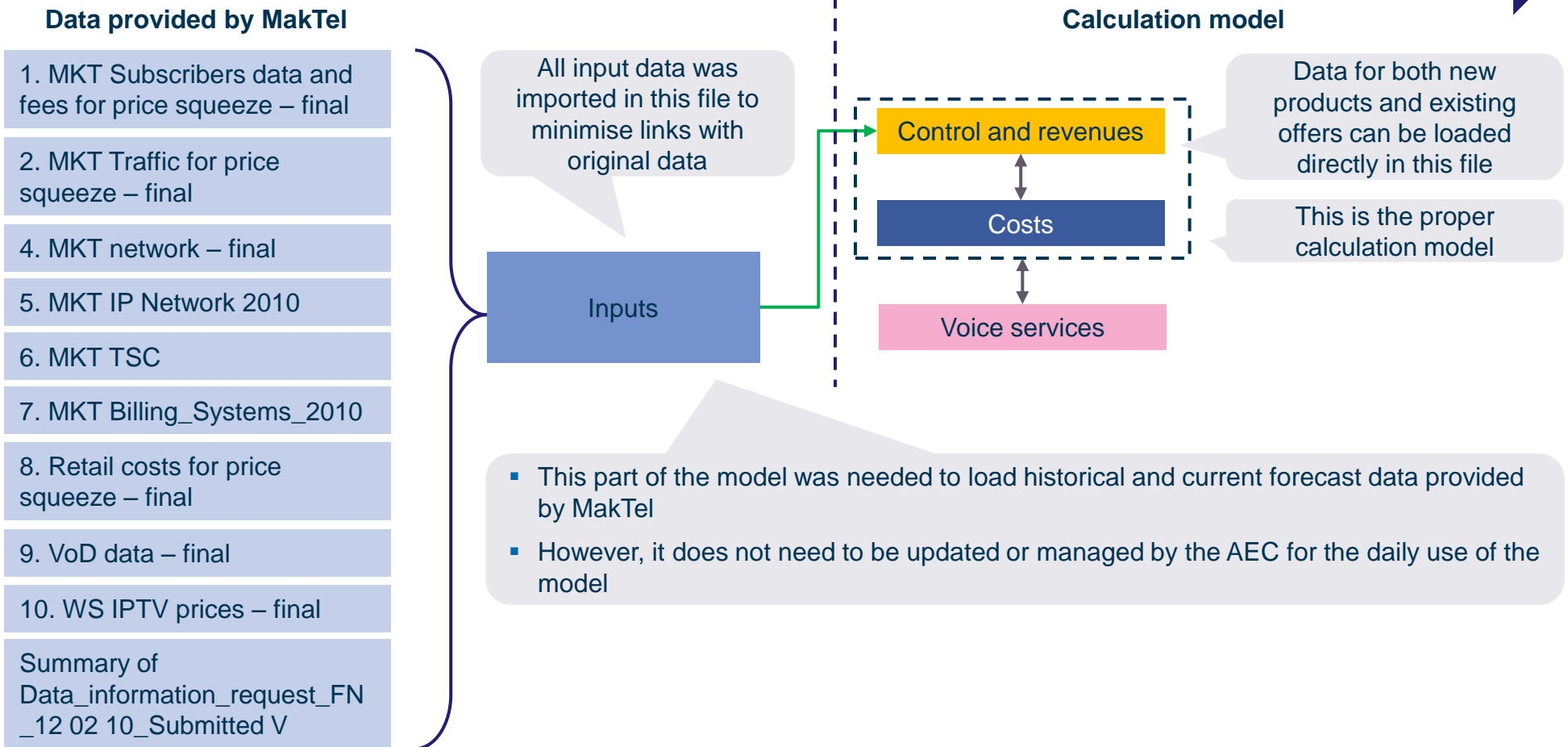
Name	Date modified	Type
 Control and revenues	02/04/2012 17:37	Microsoft Excel Worksheet
 Costs	02/04/2012 17:37	Microsoft Excel Worksheet
 Voice services	02/04/2012 12:08	Microsoft Excel Worksheet

Flow of the margin squeeze test model



The model has been mainly loaded with data provided by Makedonski Telekom in response to the data request issued

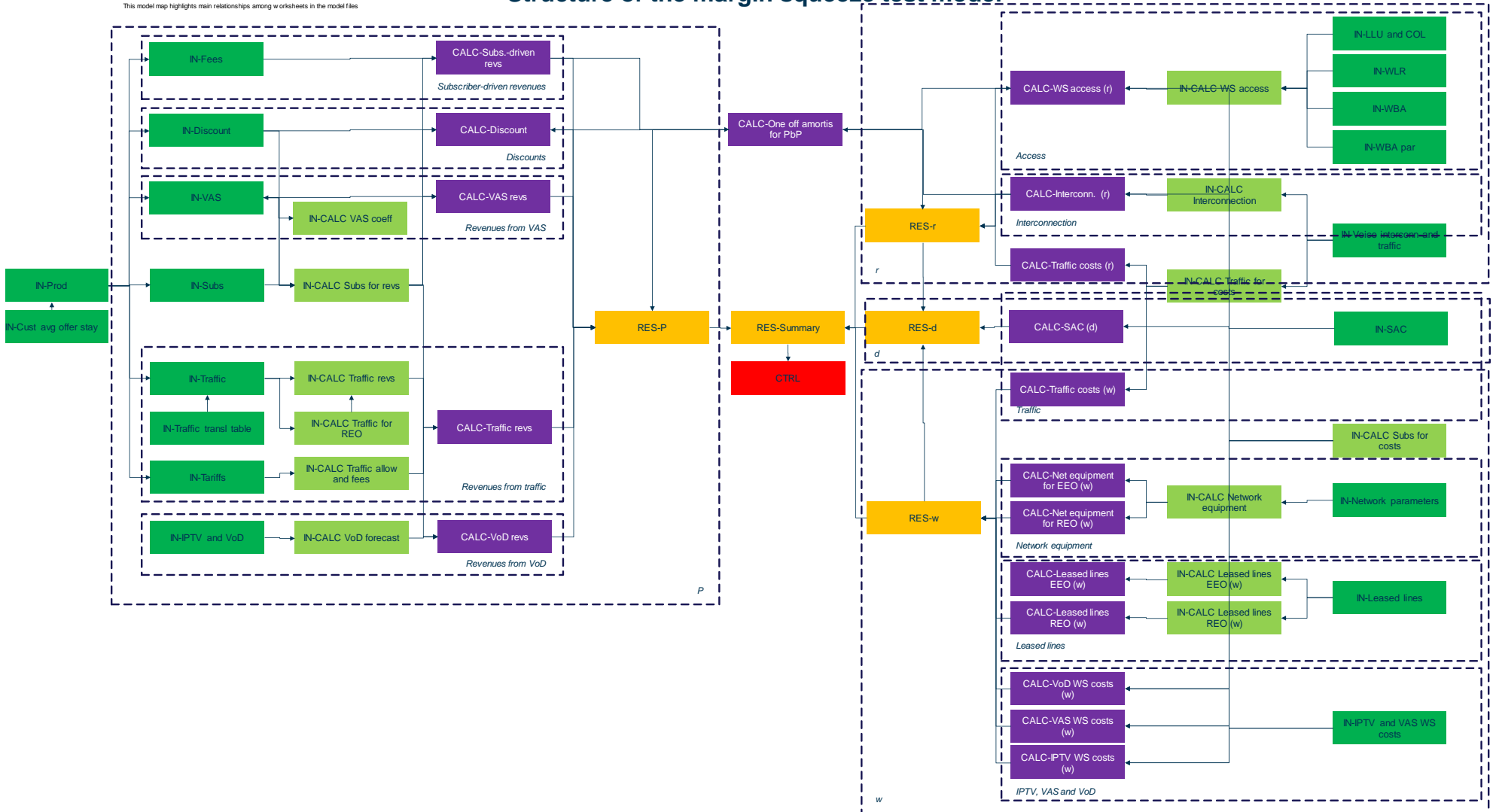
Logical flow of the margin squeeze test model



Structure of the margin squeeze test model

Structure of the margin squeeze test model

This model map highlights main relationships among worksheets in the model files



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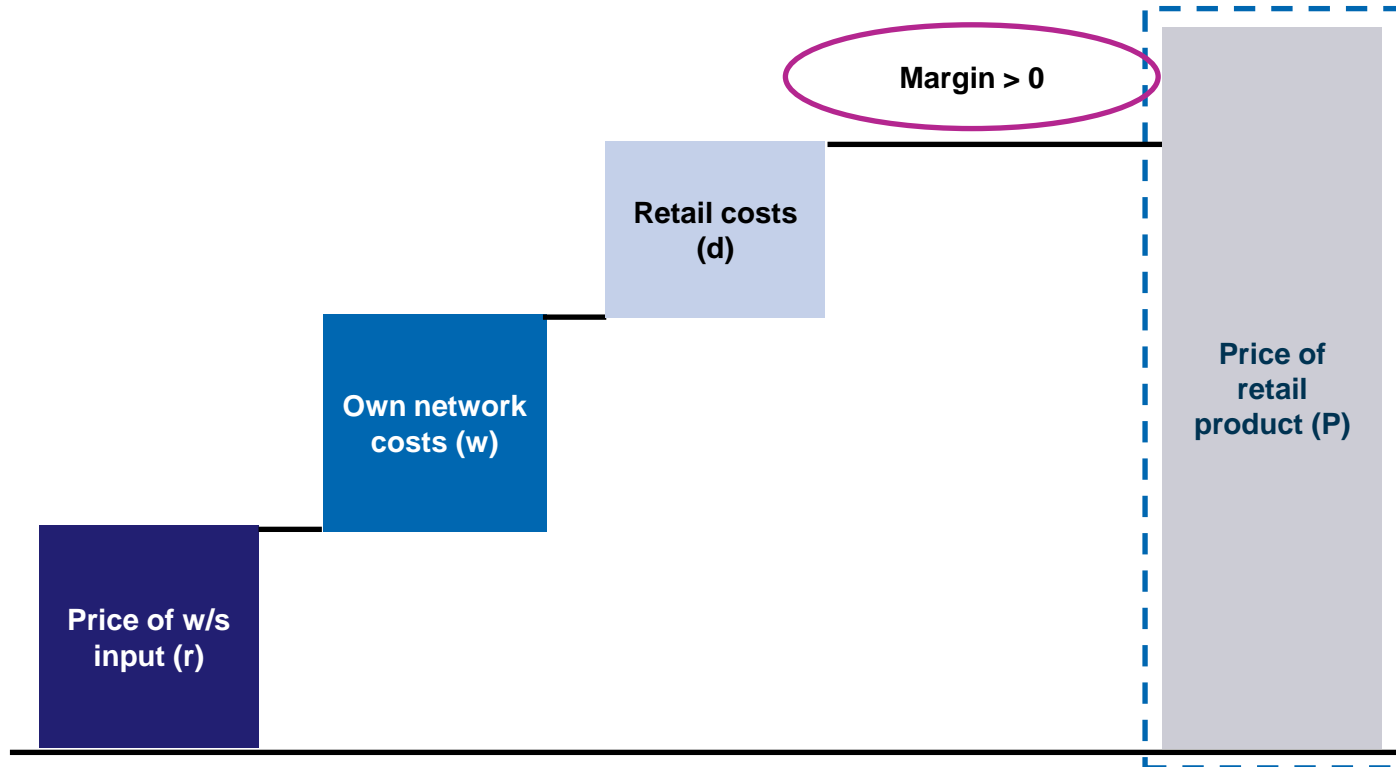
Revenues

Costs

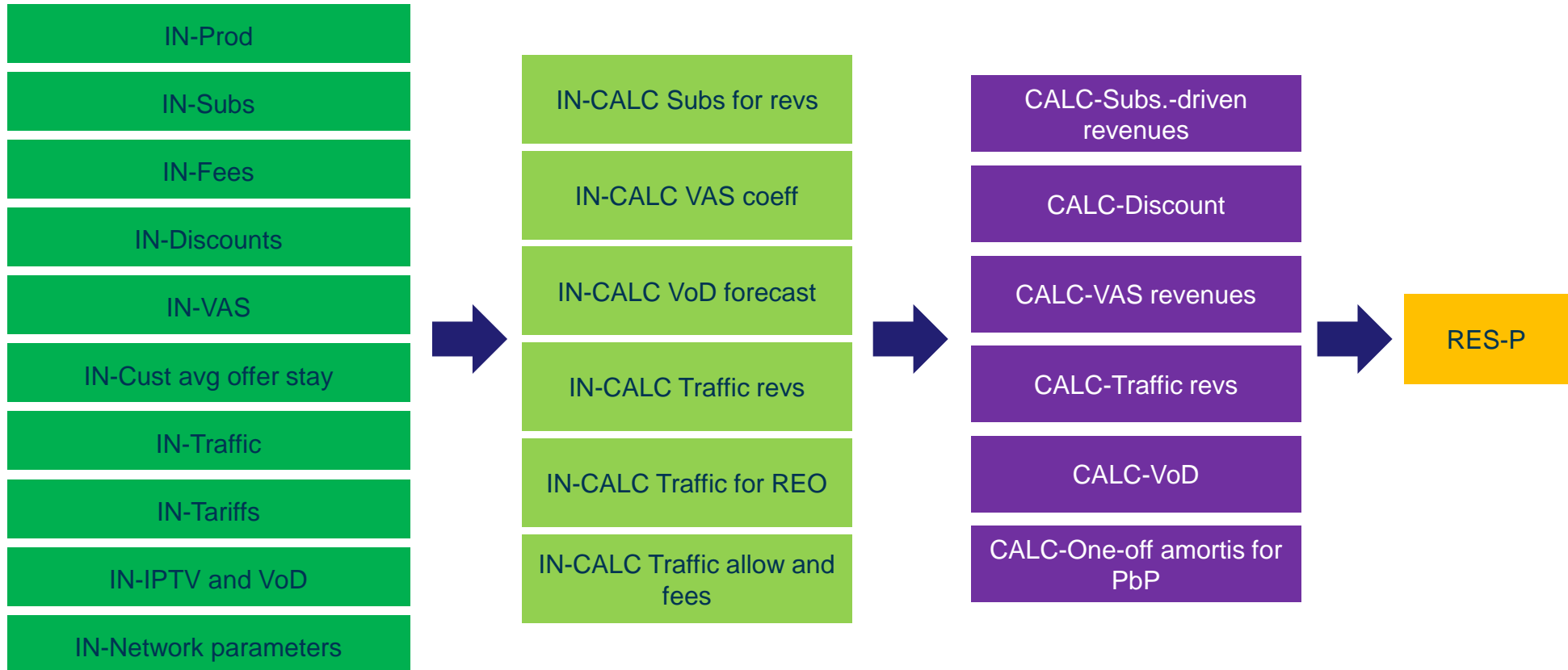
Calculation of PbP and results

The file *Control and revenues* includes model results and calculates the P component of the margin squeeze test formula

Example of a replicable product

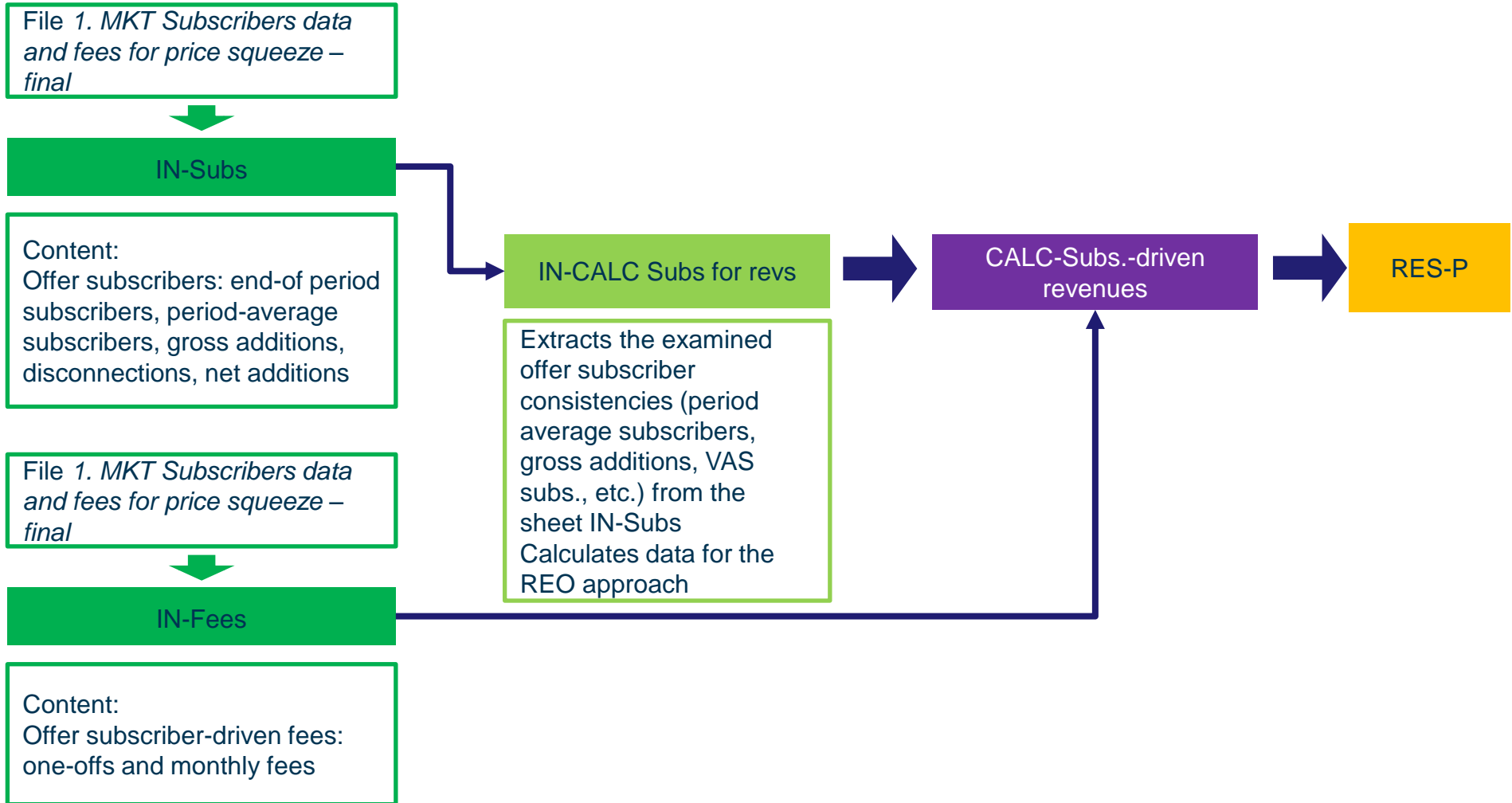


Input data pass through some intermediate calculation steps before getting to the calculation of the specific revenue items

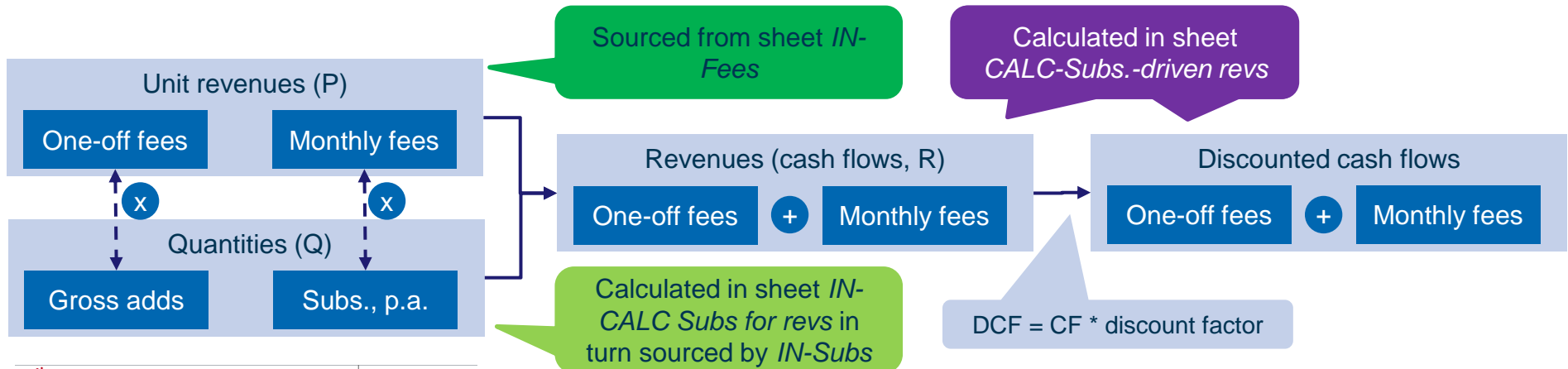


- Inputs
- Input calculations
- Calculations
- Outputs

Example of calculation flow: subscriber-driven revenues (sheet *CALC-Subs.-driven revs*) [1/2]



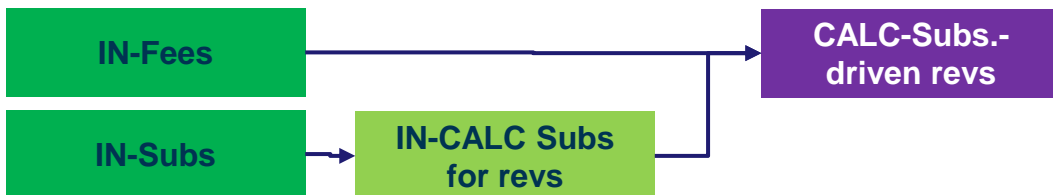
Example of calculation flow: subscriber-driven revenues (sheet *CALC-Subs.-driven revs*) [2/2]



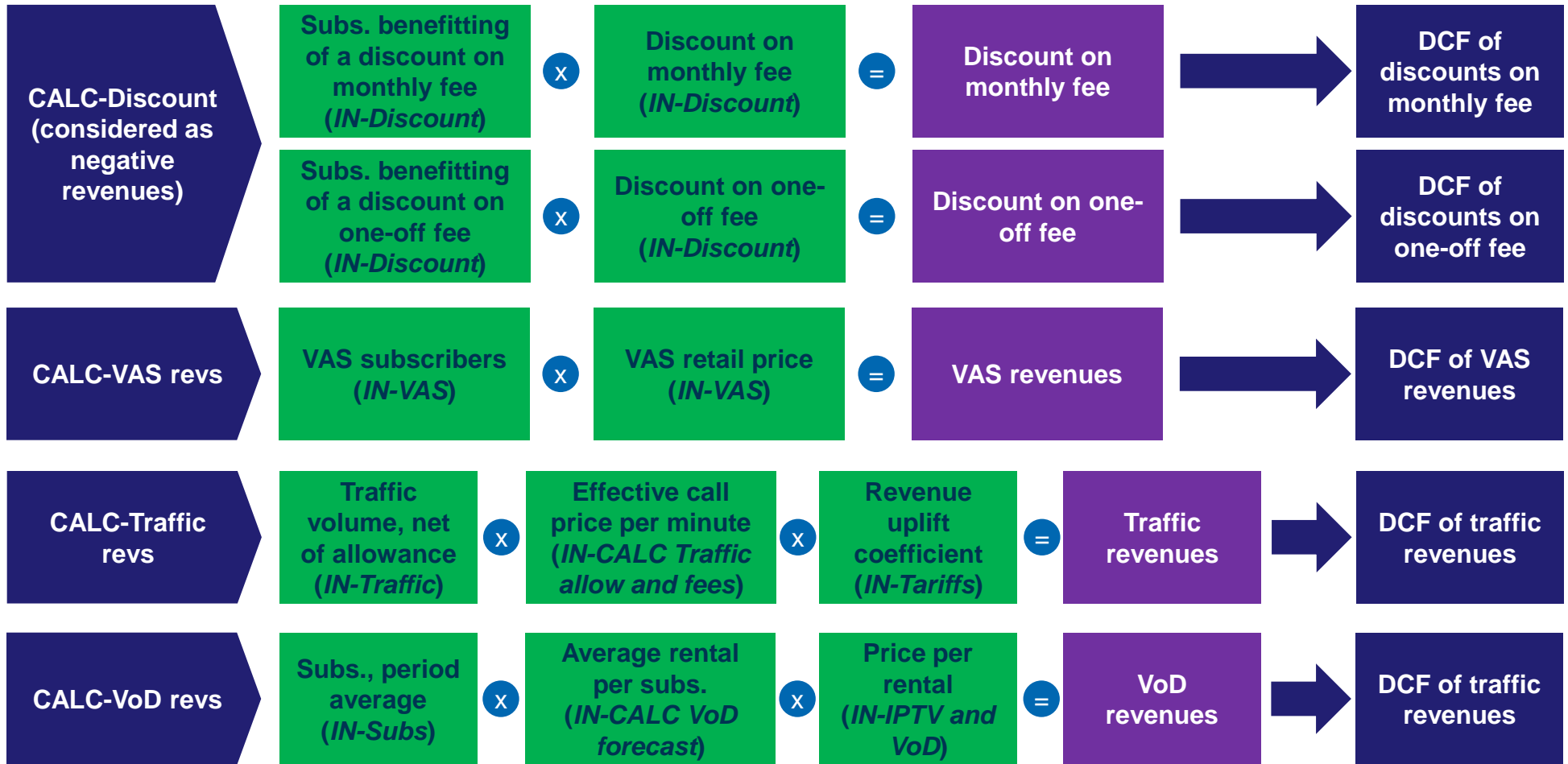
Revenues			
Call & Surf Start - Residential		Product name	
Name	Unit	CUM/NPV	
			1 Jun 12 2 Jul 12
Fees			
<i>One-off fees</i>			
Call & Surf S PSTN	MKD		
Call & Surf S ISDN 2	MKD	2,510	2,510
Call & Surf S ISDN 10	MKD	11,270	11,270
Call & Surf S ISDN 20	MKD	91,270	91,270
Call & Surf S ISDN 30	MKD	91,270	91,270
Call & Surf S FTTH	MKD	-	-
<i>Monthly fee</i>			
Call & Surf S PSTN	MKD/month		
Call & Surf S ISDN 2	MKD/month	1,016	1,016
Call & Surf S ISDN 10	MKD/month	1,270	1,270
Call & Surf S ISDN 20	MKD/month	-	-
Call & Surf S ISDN 30	MKD/month	-	-
Call & Surf S FTTH	MKD/month	-	-
Subscribers			
End of period	#	53,991	53,846
Period average	#	53,991	53,919
Gross additions	#	-	-

Revenues			
Call & Surf Start - Residential		Product name	
Name	Unit	CUM/NPV	
			1 Jun 12 2 Jul 12
Revenues			
Total	MKD thousand	2,922,096	54,891 54,817
One-off fees	MKD thousand	2,483	- -
Monthly fees	MKD thousand	2,919,613	54,891 54,817

Revenues			
Call & Surf Start - Residential		Product name	
Name	Unit	CUM/NPV	
			1 Jun 12 2 Jul 12
Discounted Cash Flows			
Total	MKD thousand	2,179,037	54,319 53,681
One-off fees	MKD thousand	2,187	- -
Monthly fees	MKD thousand	2,176,850	54,319 53,681



The other revenue stream calculations follow a similar logic with respect to the one of subscriber-driven revenues



- Input and input calculations
- Revenue calculations
- DCF calculations

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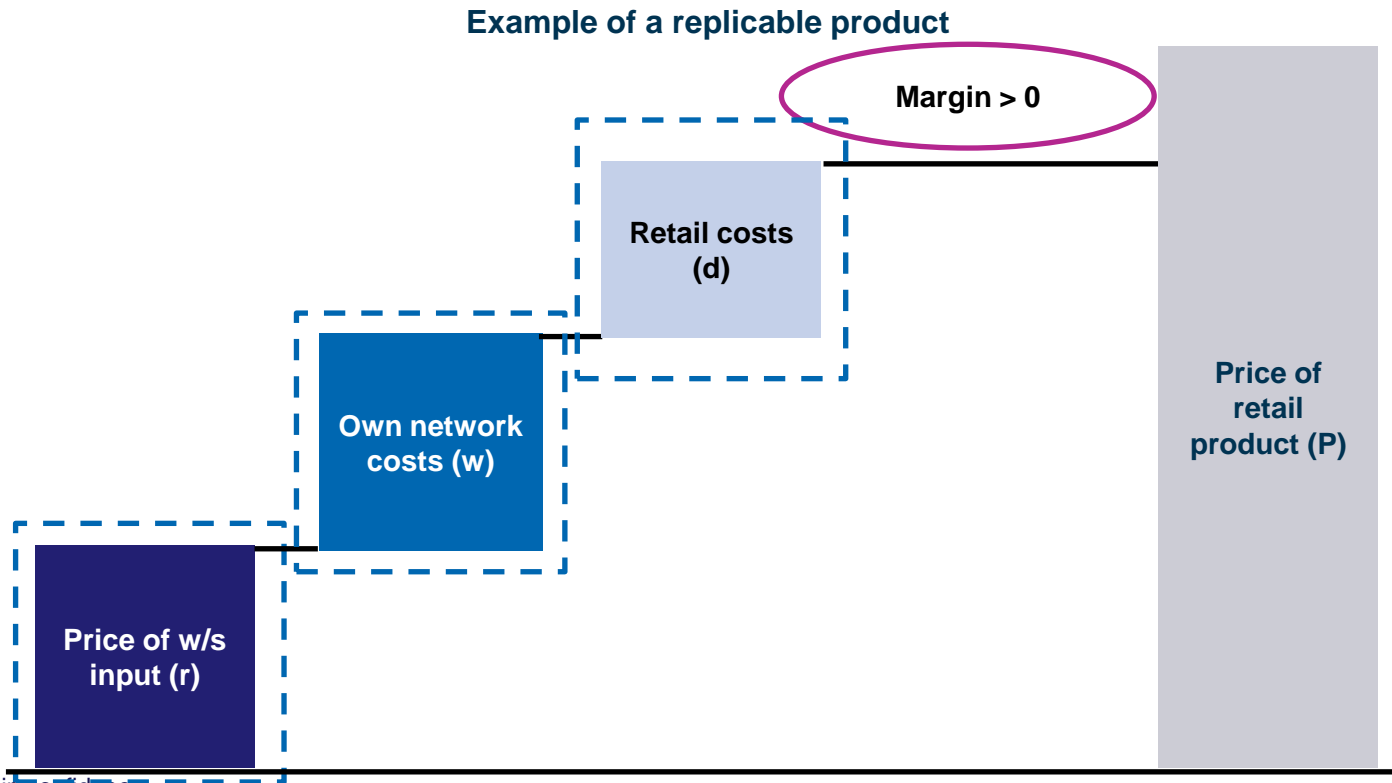
Revenues

Costs

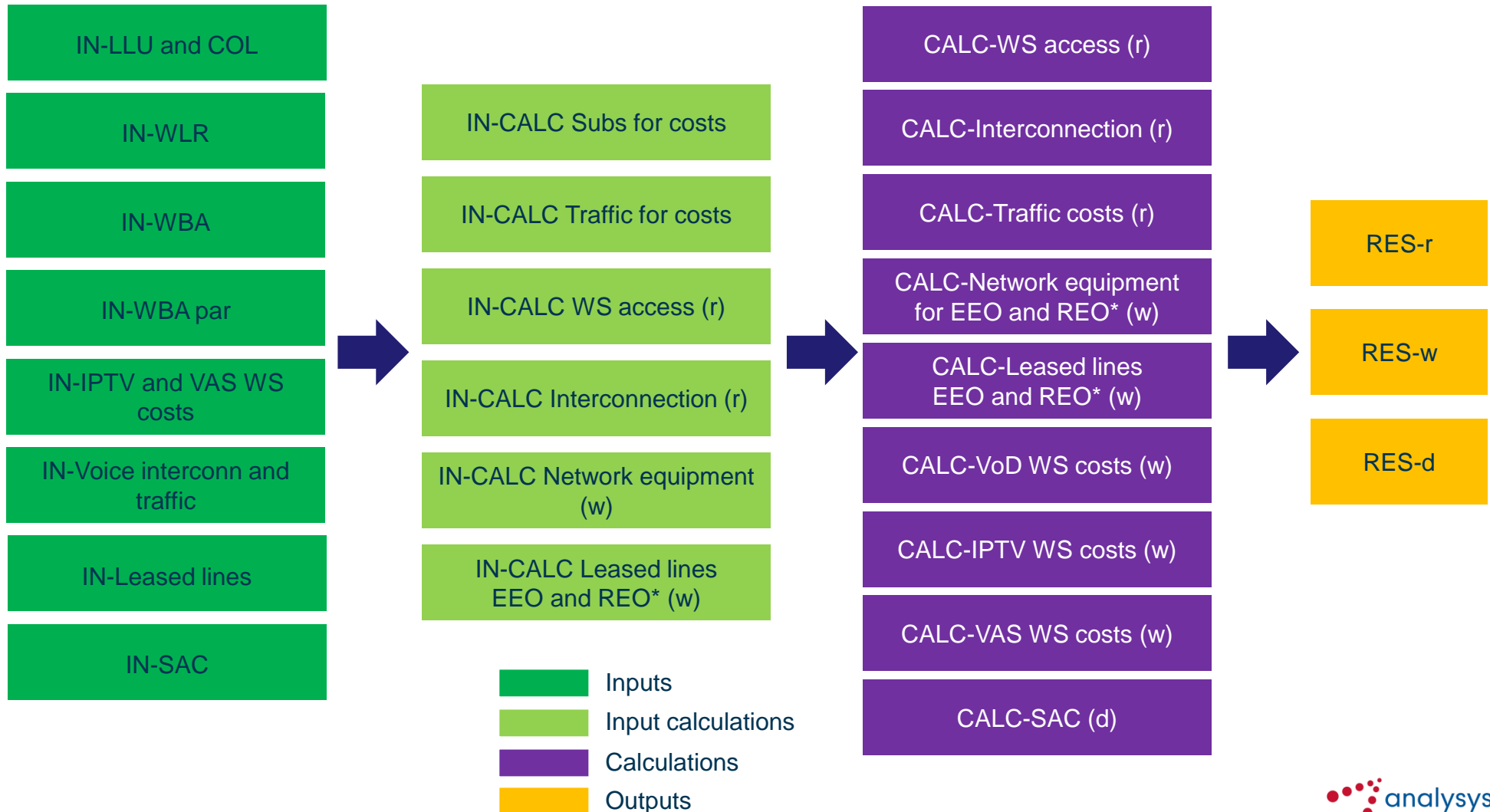
Calculation of PbP and results

The file **Costs** splits them according the margin squeeze test formula items: wholesale costs (r), own network costs (w) and retail costs (d)

- Costs are split in three main items:
 - r is the (potentially regulated) price of the upstream inputs needed to provide the downstream service charged by the SMP operator's upstream division
 - w represents the other upstream costs incurred by the operator, own network costs
 - d includes the operator's downstream (retail) costs

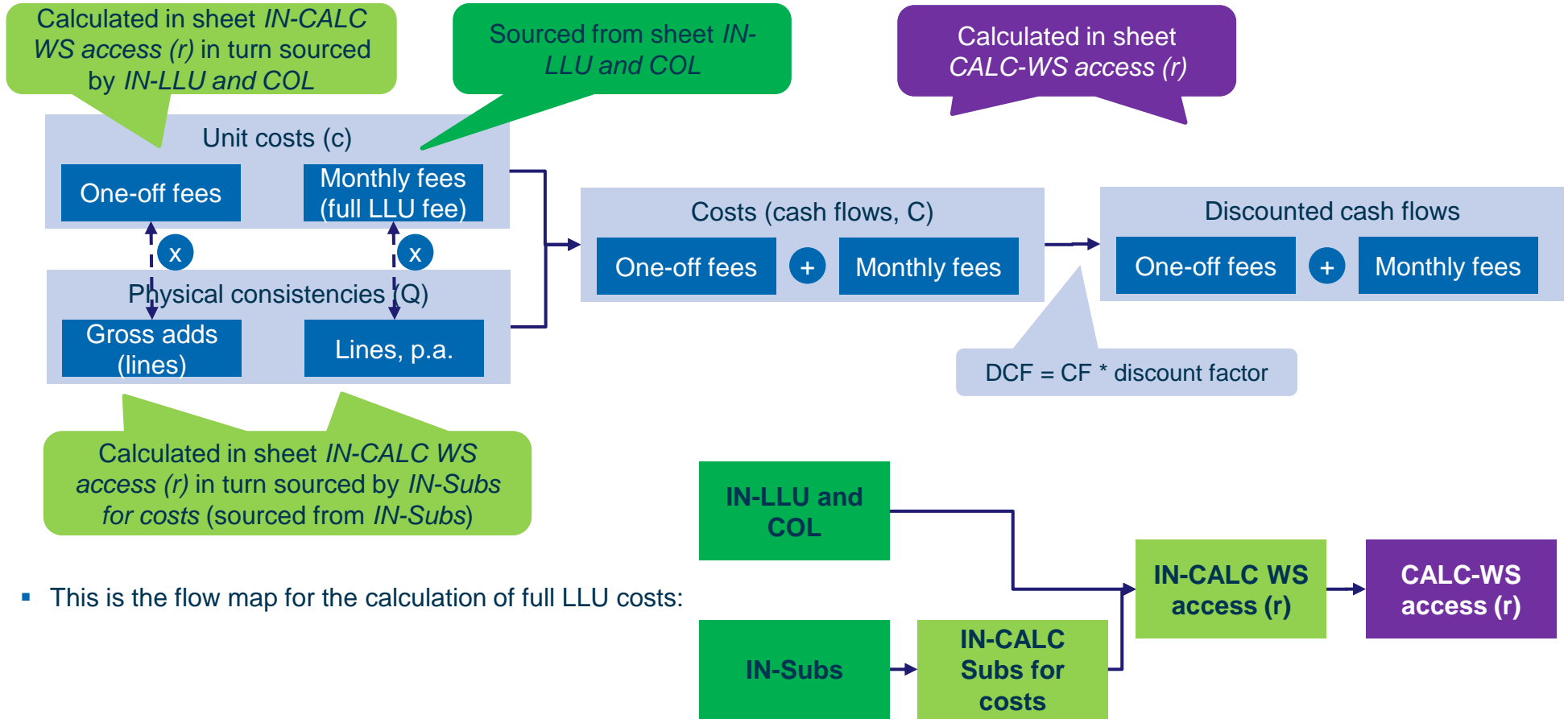


Input data pass through some intermediate calculation steps before getting to the calculation of the specific cost items



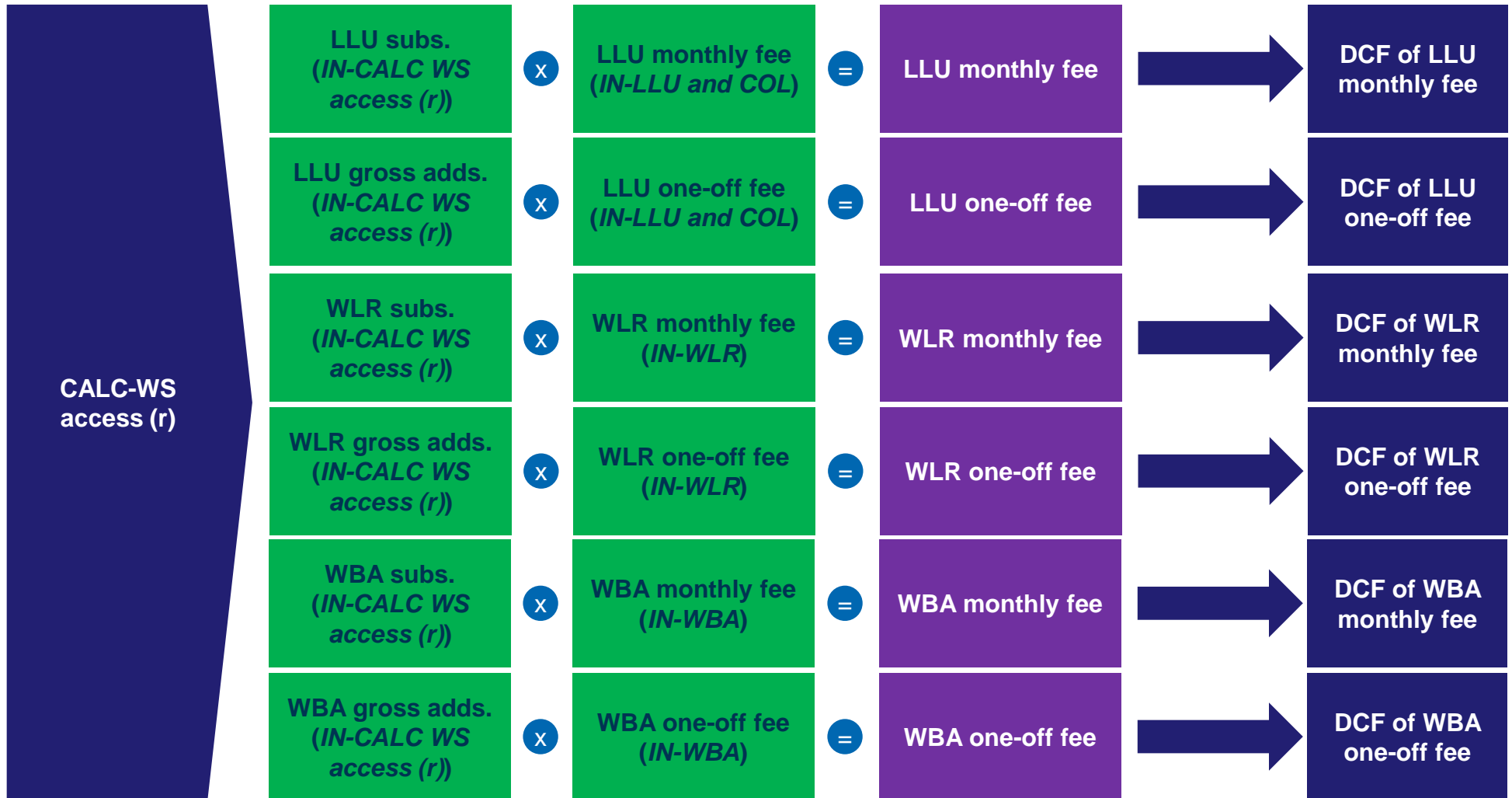
Example of calculation flow: full LLU costs (sheet *CALC-WS access (r)*)

- The logical flow of the full LLU costs in sheet *CALC-WS access (r)* is represented by the scheme below:

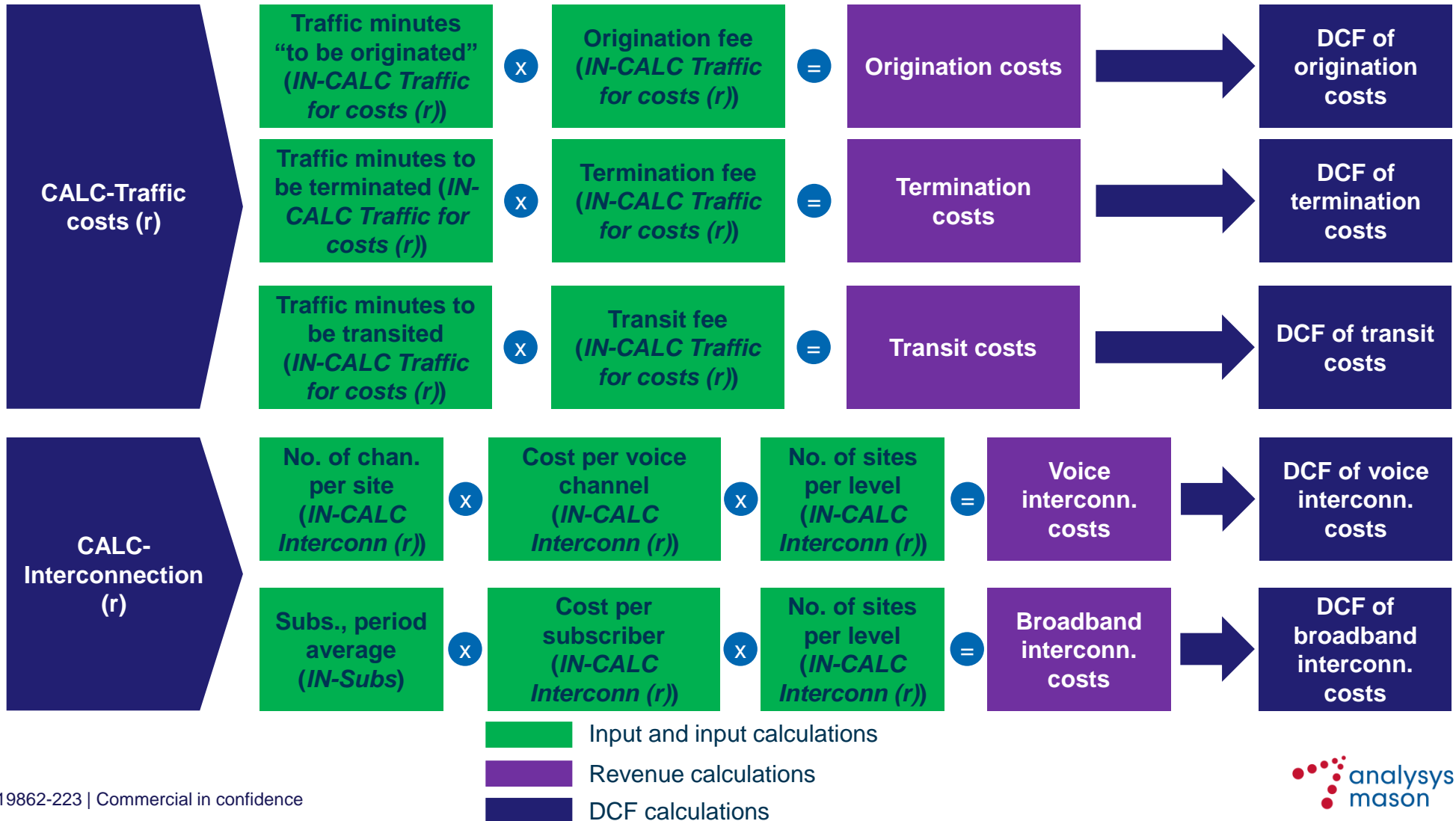


- This is the flow map for the calculation of full LLU costs:

Upstream input calculation follows the same logic of the revenue ones – r [1/2]

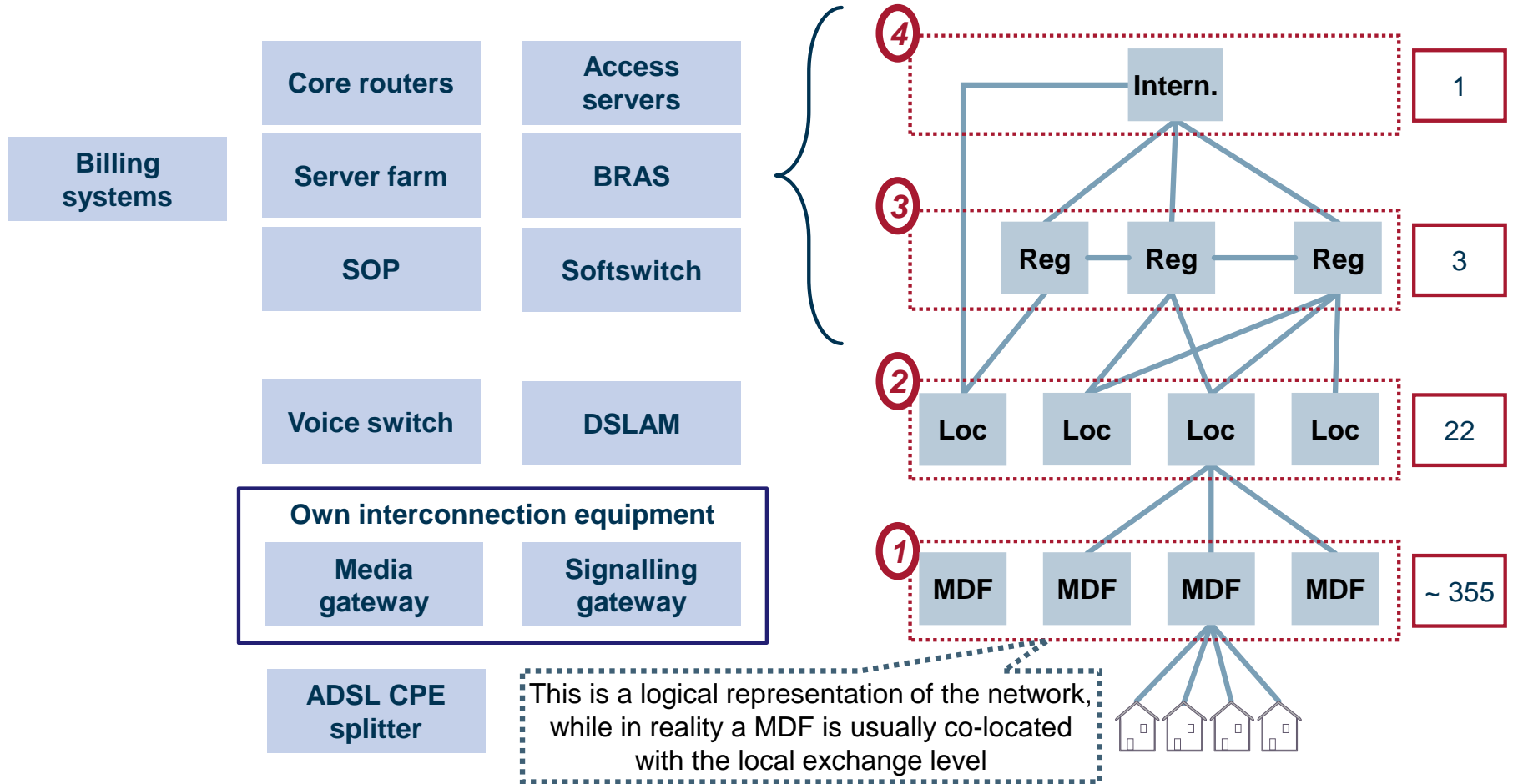


Upstream input calculation follows the same logic of the revenue ones – *r* [2/2]



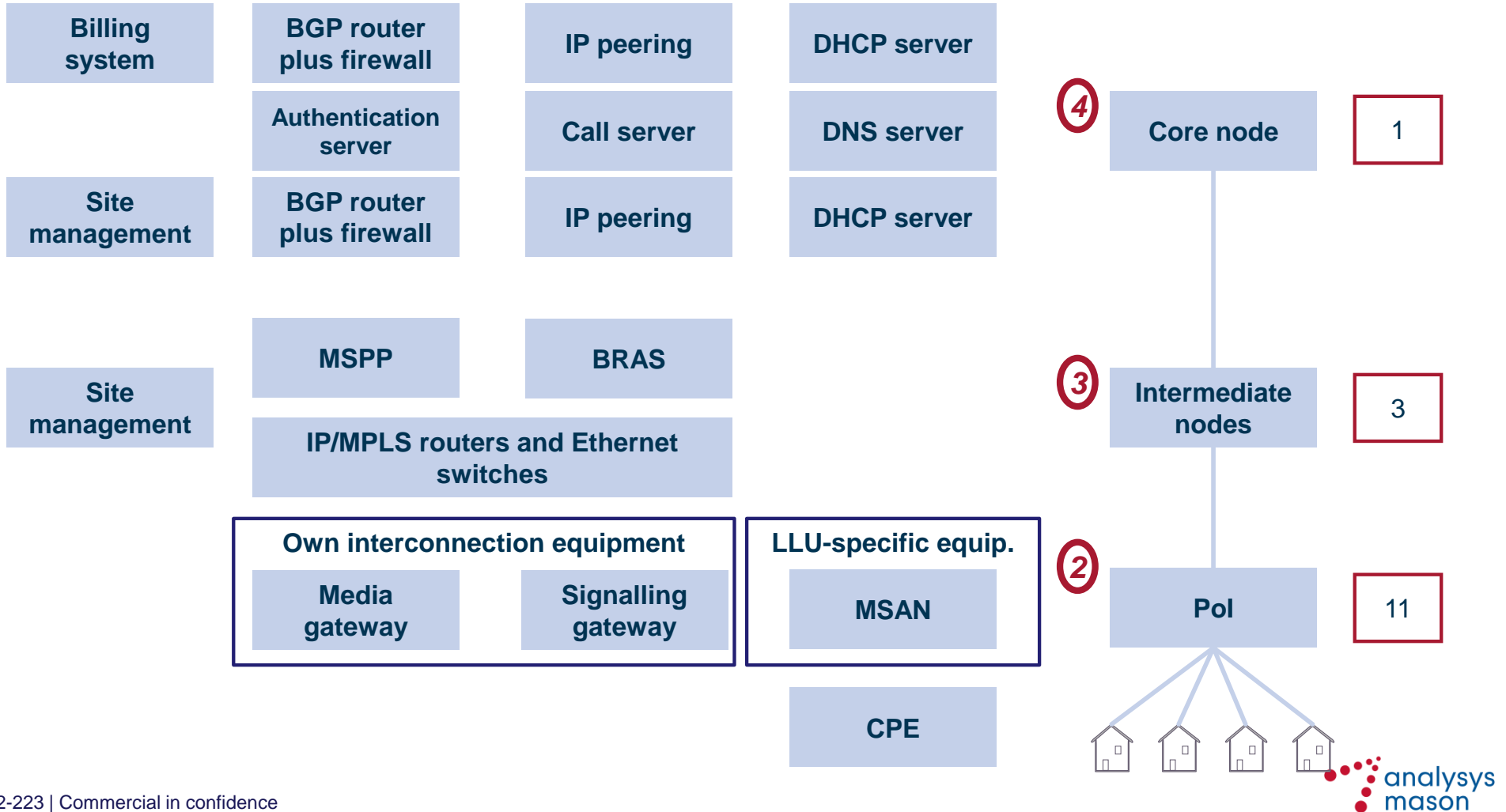
The EEO network scheme, used to calculate own network equipment costs (w), is based on the data provided by MakTel

EEO network scheme

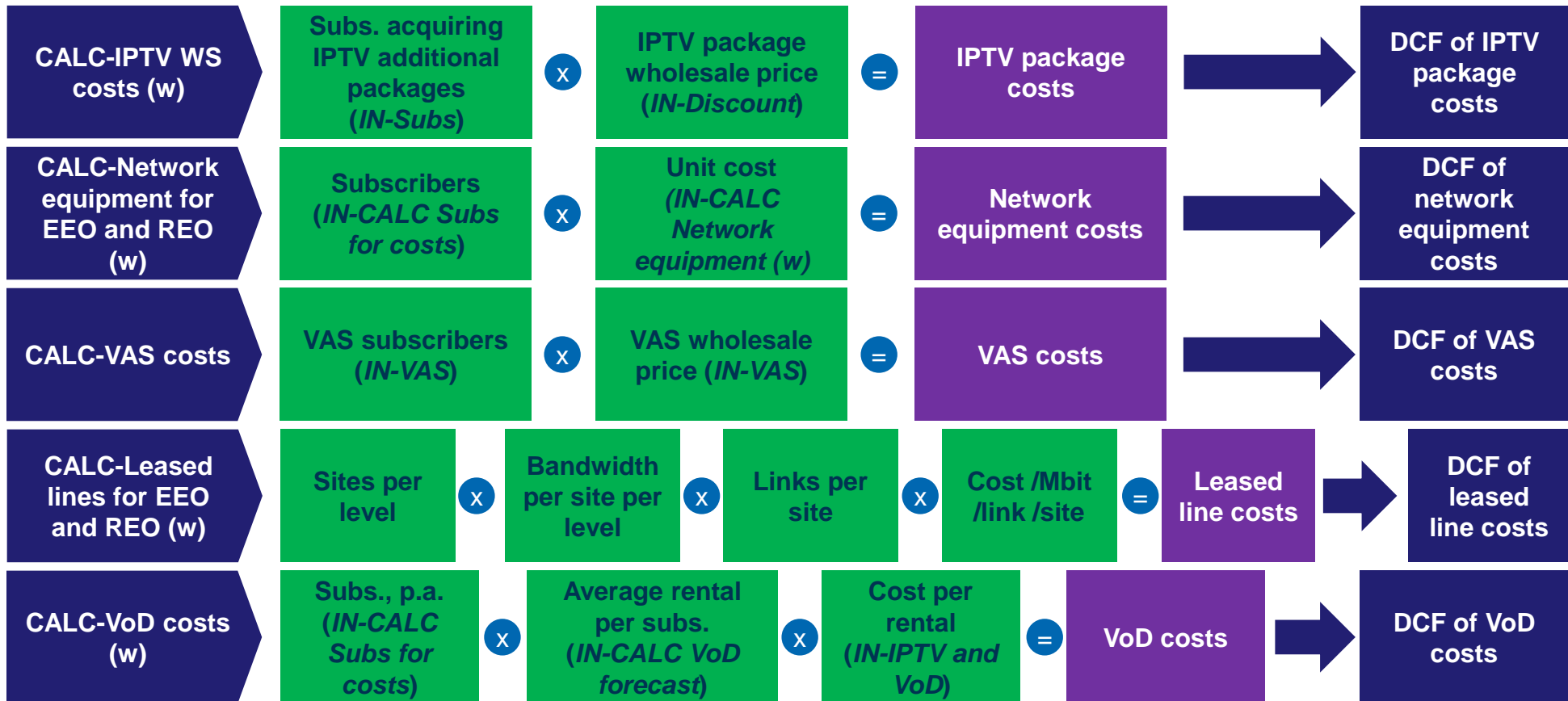


The REO network scheme, used to calculate own network equipment costs (w), mimics the deployment of an alternative operator

REO network scheme



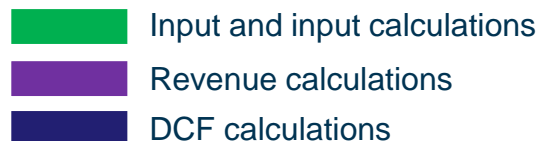
Other network costs (w) represents the other costs incurred by the operator to replicate the offer



- Input and input calculations
- Revenue calculations
- DCF calculations

Retail costs includes the operators' downstream (retail) costs – *d*

- In accordance with AEC, and similarly as it is done by other NRAs, retail costs (other than SAC) were calculated by applying a mark-up percentage (set at 20%) on the network costs ($r+w$), i.e. $Retail\ costs_t = mark\ -\ up\% * (r_t + w_t)$
 - these costs include bad debt sales, marketing and corporate advertising, customer retention, customer care, billing and collection
- On the other hand, subscriber acquisition costs (SAC, e.g. free laptops at offer subscription) are treated separately as one-off costs relevant to the specific subscriber, and then in the period by period economic approach distributed across the customer average stay in the offer
 - SAC are calculated as $SAC = Unit\ SAC\ per\ subs.*\ Gross\ additions$
- Total retail costs are then calculated as $d = Retail\ costs + SAC$



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The model has some intermediate result sheets including the relevant results split by formula item

Sheet RES-Summary

Name		Unit	CUM/NPV	1	2	17	18	25	26	41	42
				Jan 12	Feb 12	May 13	Jun 13	Jan 14	Feb 14	May 15	Jun 15
Discounted Cash Flows											
Total	MKD thousand		472,283	14,122	14,139	9,787	9,546	7,940	7,645	6,199	6,146
Check TRUE											
Revenues (P)	MKD thousand		2,520,955	66,945	66,221	49,408	47,929	43,547	43,154	33,354	32,915
Wholesale inputs (r)	MKD thousand		-765,195	-71,513	-71,138	-51,632	-51,338	-41,344	-41,890	-31,973	-31,810
Own network costs (w)	MKD thousand		-942,032	-84,508	-84,204	-63,574	-61,237	-55,743	-55,578	-42,054	-41,479
Retail costs (d)	MKD thousand		-341,445	-8,894	-8,894	-8,894	-8,200	-8,200	-8,200	-4,200	-4,200
Period-by-period											
Total	MKD thousand		623,417	14,481	14,484	11,603	11,435	9,818	9,514	8,840	8,860
Check TRUE											
Revenues (P)	MKD thousand		3,346,660	67,595	67,606	59,077	57,913	56,787	56,875	51,526	51,383
Wholesale inputs (r)	MKD thousand		-1,017,122	-10,406	-10,391	-11,904	-11,206	-11,383	-11,708	-10,127	-10,000
Own network costs (w)	MKD thousand		-1,252,248	-84,769	-84,769	-61,937	-61,237	-51,700	-51,700	-37,700	-36,979
Retail costs (d)	MKD thousand		-453,874	-8,894	-8,894	-7,971	-7,746	-7,620	-7,620	-3,754	-3,584
Cash flows											
Total	MKD thousand		623,417	14,273	14,439	11,696	11,527	10,319	10,039	9,527	9,545
Check TRUE											
Revenues (P)	MKD thousand		3,346,660	67,649	67,623	59,042	57,879	56,590	56,669	51,256	51,114
Wholesale inputs (r)	MKD thousand		-1,017,122	-10,406	-10,380	-11,906	-11,208	-11,383	-11,708	-10,127	-10,000
Own network costs (w)	MKD thousand		-1,252,248	-84,769	-84,769	-61,937	-61,237	-51,700	-51,700	-37,700	-36,979
Retail costs (d)	MKD thousand		-453,874	-8,894	-8,894	-7,971	-7,746	-7,713	-7,713	-4,400	-4,400

Sheet RES-d (retail costs)

Call & Surf Combri - Residential		Product name	20%	1	2	17	18	25	26	41	42
Name		Unit	Mark-up for retail costs	Jan 12	Feb 12	Mar 12	Jun 13	Jul 13	Feb 14	Mar 14	
Discounted Cash Flows											
Total	MKD thousand			51,336	1,934	939	1,008	1,003	1,056	1,026	
Check TRUE											
Network costs	MKD thousand			46,364	770	775	944	943	1,024	994	
SAC	MKD thousand			4,972	1,164	164	65	60	32	32	
Period-by-period											
Total	MKD thousand			68,007	680	705	1,249	1,269	1,565	1,530	
Check TRUE											
Network costs	MKD thousand			62,242	656	674	1,139	1,157	1,407	1,377	
SAC	MKD thousand			5,765	24	30	110	113	158	153	
Costs											
Total	MKD thousand			68,007	1,941	956	1,203	1,210	1,372	1,347	
Check TRUE											
Network costs	MKD thousand			62,242	777	790	1,127	1,138	1,331	1,305	
SAC	MKD thousand			5,765	1,164	166	77	72	41	42	
Check TRUE											

Sheet RES-r (needed wholesale inputs)

Call & Surf Combri - Residential		Product name	1	2	17	18	25	26	41	42	
Name		Unit	CUM/NPV	Jan 12	Feb 12	May 13	Jun 13	Jan 14	Feb 14	May 15	Jun 15
Discounted Cash Flows											
Total	MKD thousand		793,353	19,490	19,108	15,167	14,948	13,331	12,985	10,939	
Check TRUE											
Wholesale access	MKD thousand		744,668	18,242	17,875	14,223	14,016	12,538	12,201	10,278	
Interconnection	MKD thousand		2,008	48	45	38	35	35	34	29	
Traffic	MKD thousand		46,677	1,200	1,188	906	895	758	750	632	
Period-by-period											
Total	MKD thousand		1,063,023	19,459	19,462	18,254	18,180	17,423	17,178	16,853	
Check TRUE											
Wholesale access	MKD thousand		997,991	18,200	18,203	17,126	17,054	16,393	16,149	15,837	
Interconnection	MKD thousand		2,713	46	46	45	45	45	45	45	
Traffic	MKD thousand		62,318	1,212	1,213	1,083	1,081	985	985	972	
Costs											
Total	MKD thousand		1,063,023	19,692	19,512	18,125	18,051	17,323	17,052	16,811	
Check TRUE											
Wholesale access	MKD thousand		997,991	18,431	18,253	16,997	16,925	16,293	16,022	15,794	
Interconnection	MKD thousand		2,713	49	46	45	45	45	45	45	
Traffic	MKD thousand		62,318	1,212	1,213	1,083	1,081	985	985	972	

Sheet RES-w (own network costs)

Call & Surf Combri - Residential		Product name	1	2	17	18	25	26	41	42	
Name		Unit	CUM/NPV	Jan 12	Feb 12	May 13	Jun 13	Jan 14	Feb 14	May 15	Jun 15
Discounted Cash Flows											
Total	MKD thousand		1,005,805	24,505	24,254	19,271	19,039	16,735	16,553	13,957	13,812
Check TRUE											
Network equipment	MKD thousand		689,690	16,806	16,631	13,214	13,055	11,476	11,350	9,571	9,471
Leased lines	MKD thousand		316,115	7,699	7,623	6,057	5,984	5,260	5,202	4,387	4,341
Traffic	MKD thousand		-	-	-	-	-	-	-	-	-
Video on-demand	MKD thousand		-	-	-	-	-	-	-	-	-
IPTV wholesale services	MKD thousand		-	-	-	-	-	-	-	-	-
VAS	MKD thousand		-	-	-	-	-	-	-	-	-
Period-by-period											
Total	MKD thousand		1,348,853	24,763	24,768	23,029	22,991	21,748	21,737	21,448	21,448
Check TRUE											
Network equipment	MKD thousand		924,920	16,983	16,983	15,791	15,765	14,913	14,905	14,707	14,707
Leased lines	MKD thousand		423,933	7,780	7,784	7,238	7,226	6,835	6,832	6,741	6,741
Traffic	MKD thousand		-	-	-	-	-	-	-	-	-
Video on-demand	MKD thousand		-	-	-	-	-	-	-	-	-
IPTV wholesale services	MKD thousand		-	-	-	-	-	-	-	-	-
VAS	MKD thousand		-	-	-	-	-	-	-	-	-

The model main dashboard including the aggregated results of the model and the main sensitivity parameters

Sheet CTRL (model main dashboard)

Offer name		Version
Call & Surf Start - Residential	<i>product.name</i>	0.1
Set-up by		Date
Fabio Fradella / Analysys Mason		NBED

Output - DCF

Name	Unit	Value
Revenues (P)	MKD thousand	2,676,910
Wholesale inputs (r)	MKD thousand	-793,353
Own network costs (w)	MKD thousand	-1,005,805
Retail costs (d)	MKD thousand	-359,832
NPV	MKD thousand	517,921
Margin	%	19%

Output - Period by period

Name	Unit	Period 1	Period 2	Period 3
Revenues (P)	MKD thousand	800,608	748,737	679,586
Wholesale inputs (r)	MKD thousand	-232,839	-220,892	-205,617
Own network costs (w)	MKD thousand	-295,970	-278,763	-260,172
Retail costs (d)	MKD thousand	-105,762	-99,931	-93,158
Profit	MKD thousand	166,037	149,151	120,639
Margin	%	21%	20%	18%

Scenario parameters

Name	Unit	Value
Model approach		EEO
Access technology		LLU
In case of FTTH access-based products set to CPS+WLR + WBA		
Is a FTTH access product?		NO
WACC	%	13.40% <i>WACC</i>
Monthly WACC	%	1.05% <i>WACC.month</i>

Input parameters

Name	Unit	Value
Offer lifetime		
Offer launch		Jan 12 <i>launch.date</i>
Customer average stay in the offer	months	24 <i>cust.avg.life</i>
Mark-up for retail costs	%	20% <i>mark_up.d</i>
EEO	%	20%
REO	%	20%

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