



Republica de Moçambique
Ministério da Ciência e Tecnologia, Ensino Superior e Técnico Profissional
(MCTESTP)

The Making of MoRENet

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Starting the Implementation of MoRENet

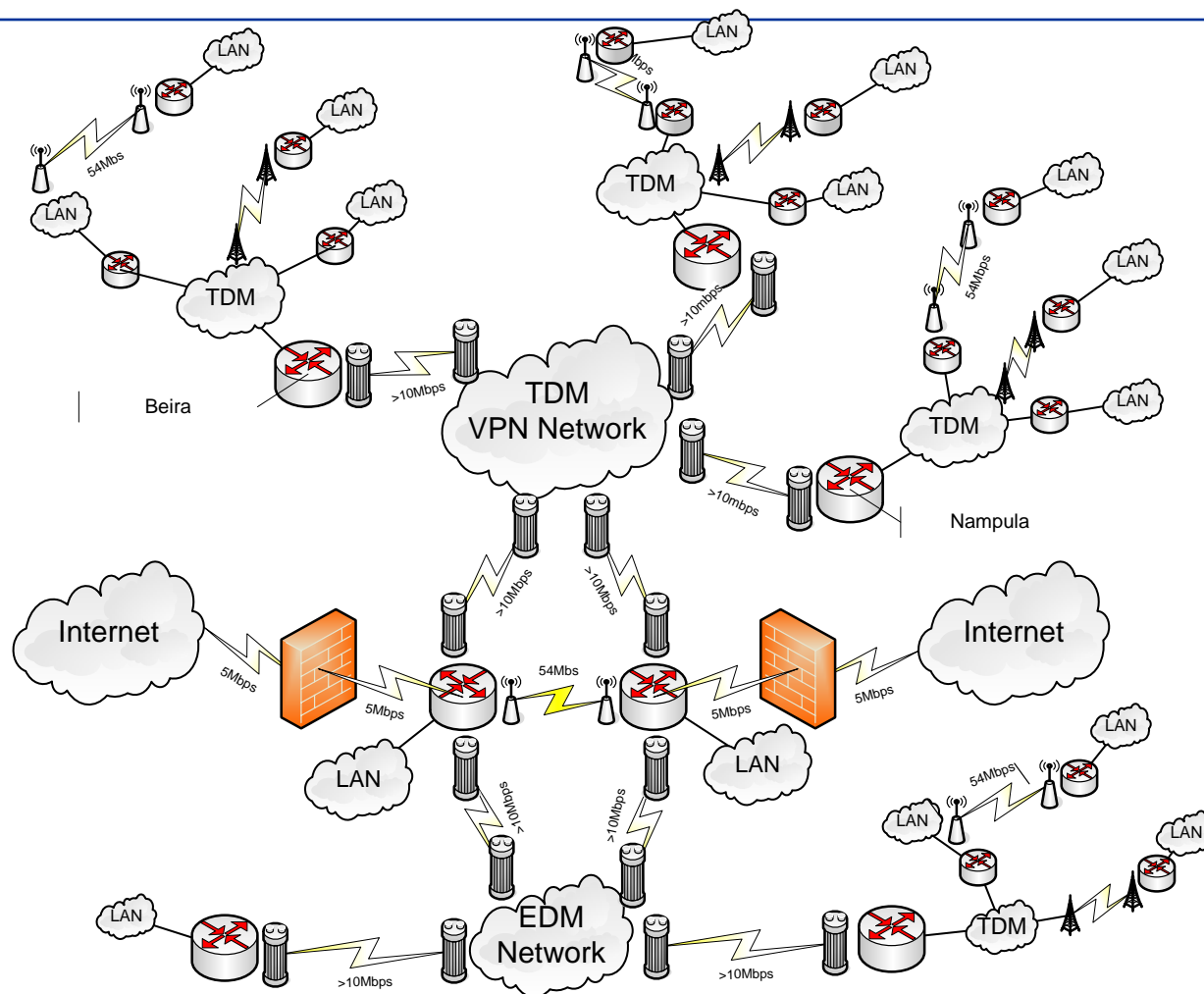
- No existing National Research and Education Networks in Mozambique, other than few private campus networks and institute specific ISP contracts
- Inadequate collaboration and knowledge exchange between academic institutions, research stations and private sector
- Universities or research institutions have no access to international knowledge resources and academic networks
- High bandwidth costs of national backbone force universities and research stations to use high-cost low bandwidth international VSAT connections
- Universities and research institutions are investing in IT without common standards and definition of shared platforms and services

What happened? (1)

1. The approval of the ICT Policy Implementation Strategy in 2002 by the Government of Mozambique was followed by the challenge of establishing new government structures;
2. One of the projects of the ICT Policy Implementation Strategy, in the education priority area, is the Establishment of the Higher Education Science and Technology Network
3. With the creation of the Ministry of Science and Technology in 2005 the government responsibility over the academic (research and education) and ICT sectors were spread out over two ministries (Education and Science and Technology)



Technical Implementation was to start in 2007



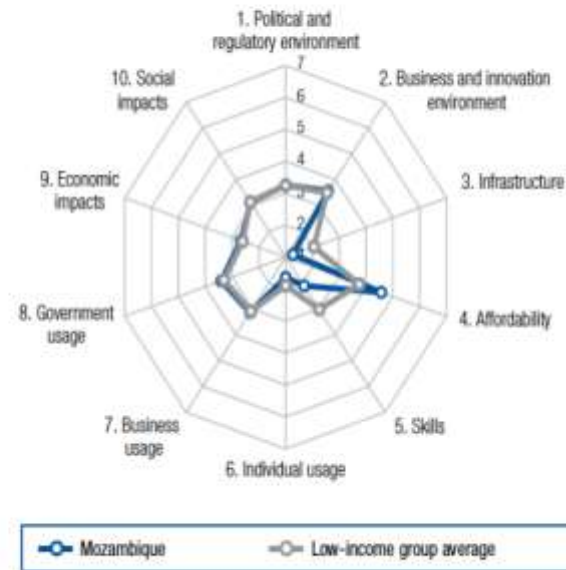
What happened? (2)

3. The MoRENet initiative had been spread out over the Mozambican academic community as a warm blanket
4. The Government of Mozambique has not secured funding for all the priority projects included in the ICT Policy Implementation Strategy, including MoRENet.
5. In this period the telecom market in Mozambique was dominated by the national telecom operator, TDM



Mozambique

	Rank (out of 143)	Value (1-7)
Networked Readiness Index 2015	129	2.9
Networked Readiness Index 2014 (out of 148).....	137	2.8
Networked Readiness Index 2013 (out of 144).....	133	2.8
A. Environment subindex	119	3.4
1st pillar: Political and regulatory environment.....	104	3.3
2nd pillar: Business and innovation environment.....	120	3.6
B. Readiness subindex	130	2.6
3rd pillar: Infrastructure	137	1.3
4th pillar: Affordability.....	90	4.6
5th pillar: Skills.....	140	2.1
C. Usage subindex	127	2.7
6th pillar: Individual usage.....	136	1.6
7th pillar: Business usage.....	116	3.1
8th pillar: Government usage.....	108	3.4
D. Impact subindex	119	2.9
9th pillar: Economic impacts.....	117	2.7
10th pillar: Social impacts.....	120	3.1



Revival of MoRENet (2009)

- The Ministry of Science and Technology has secured World Bank funding for the MoRENet project, through the Mozambique eGovernment and Communications Infrastructure Project (MEGCIP);
- The IT departments of the public universities and the Ministry of Education and Culture were involved;
- The Minister of Education and Culture called for a meeting of the rectors of the public universities (with mandatory attendance!); and
- There was a formal meeting of the Minister of Science and Technology and the vice-Minister of Education and Culture to underline the commitment to jointly go forward with the MoRENet project.



Effects of Telecommunications Reforms in Mozambique

- In 2009 SEACOM, a submarine cable operator had begun to provide Internet connectivity to Mozambique;
- In 2012 Movitel, the third Mobile operator in Mozambique entered the Mozambican market for mobile, fixed line and Inter services;
- These developments had a positive impact on the behaviour and prices of the telecommunications operators:
Reduction on the Prices of Broadband and Internet Access in Mozambique



MoRENet Business Model with Financial Plan (2012)

	2011	2012	2013	2014	2015	Totals	
	\$0	\$797,042	\$822,906	\$925,051	\$1,154,485	\$3,699,484	Model number: 2
26%	\$65,000	\$65,000	\$65,000	\$65,000		\$260,000	
2012 budget	\$40,000	\$72,500	\$75,000	\$75,000		\$262,500	
staff contribution	\$30,000					\$30,000	
staff contribution	\$22,500					\$22,500	
Internet Exchange		\$10,000	\$50,000	\$70,000	\$70,000	\$200,000	
Total income	\$157,500	\$944,542	\$1,012,906	\$1,135,051	\$1,224,485	\$4,474,484	Total revenues
OPEX	\$140,425	\$1,010,542	\$1,249,906	\$1,479,551	\$1,489,485	\$5,369,909	Operational expenses from OPEX
Ebitda	\$17,075	(\$66,000)	(\$237,000)	(\$344,500)	(\$265,000)	(\$895,425)	Total income minus OPEX
Depreciation	\$0	\$51,250	\$82,500	\$91,250	\$93,750	\$318,750	Is calculated from expected CAPEX
	\$17,075	(\$100,175)	(\$419,675)	(\$855,425)	(\$1,214,175)		Cummulative loss or profit over n
	\$355,000	\$175,000	\$85,000	\$60,000	\$0	\$675,000	



Implementation of the MoRENet Business Plan:

- Set-up MoRENet Management Structures
- As part of the MEGCIP Project a technical team for MoRENet deployment has been established: Hiring of MoRENet Director and the Technical team in 2012;
- Appointment of the MoRENet Board in 2015 composed of representatives from the Ministry, Higher Education and Research Institutions

Implementation of the MoRENet Business Plan:

- Structuring of contracts for International and National Data Communication Services and IT equipment;
- As part of the MEGCIP Project Support the following contracts have been signed :
 - **SEACOM**: Provision of IRU (1 STM1) for 20 years, starting 2012;
 - **Ubuntunet**: Provision of IRU (1 STM1) for 20 years, starting 2014.
 - **TDM**: Provision of National Broadband connectivity services (2012-2015)
 - **Movitel**: Provision of National Broadband connectivity services (2015-2017)



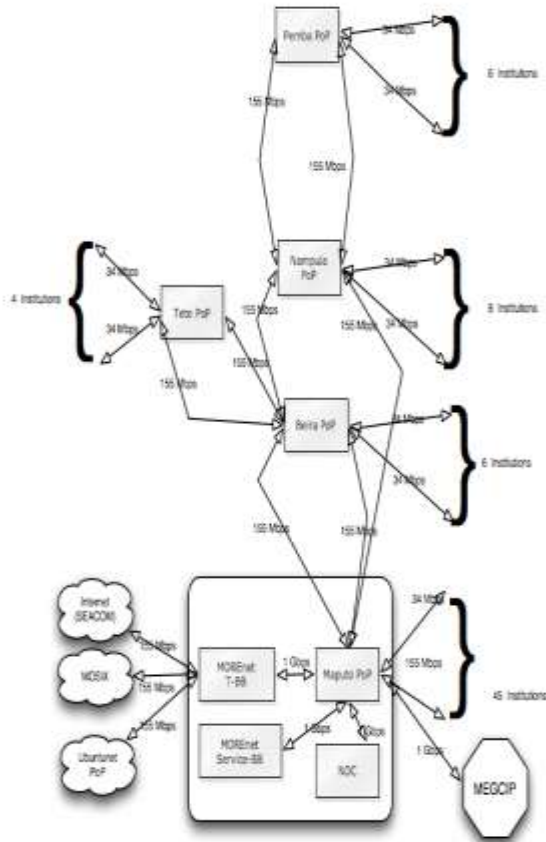
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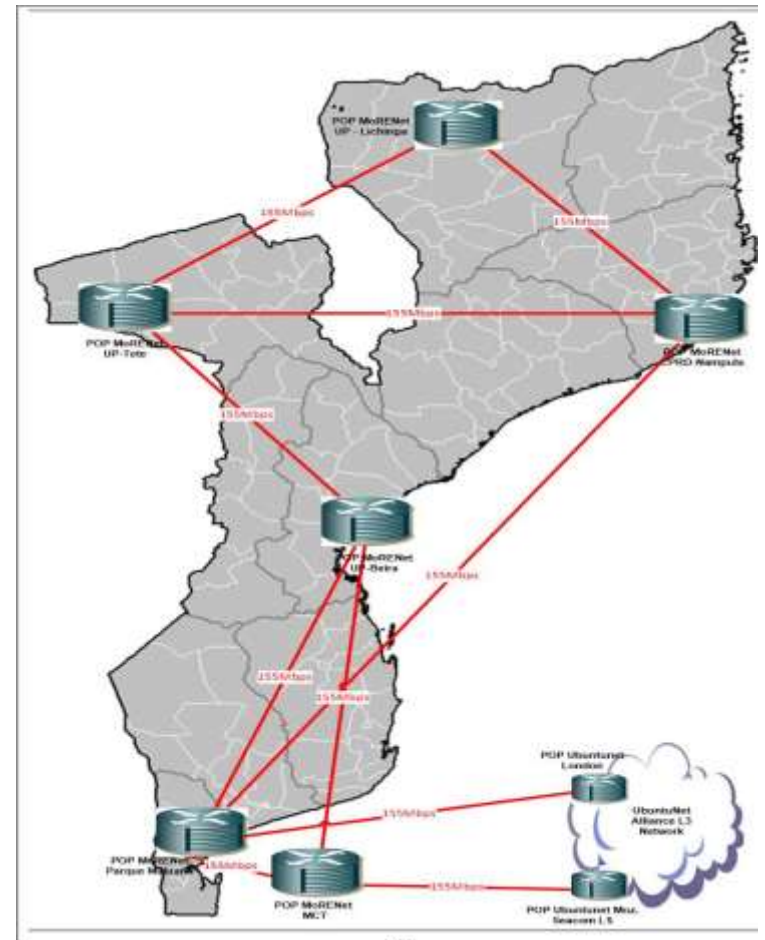
MoRENet Backbone:

Proposed in the Business Plan



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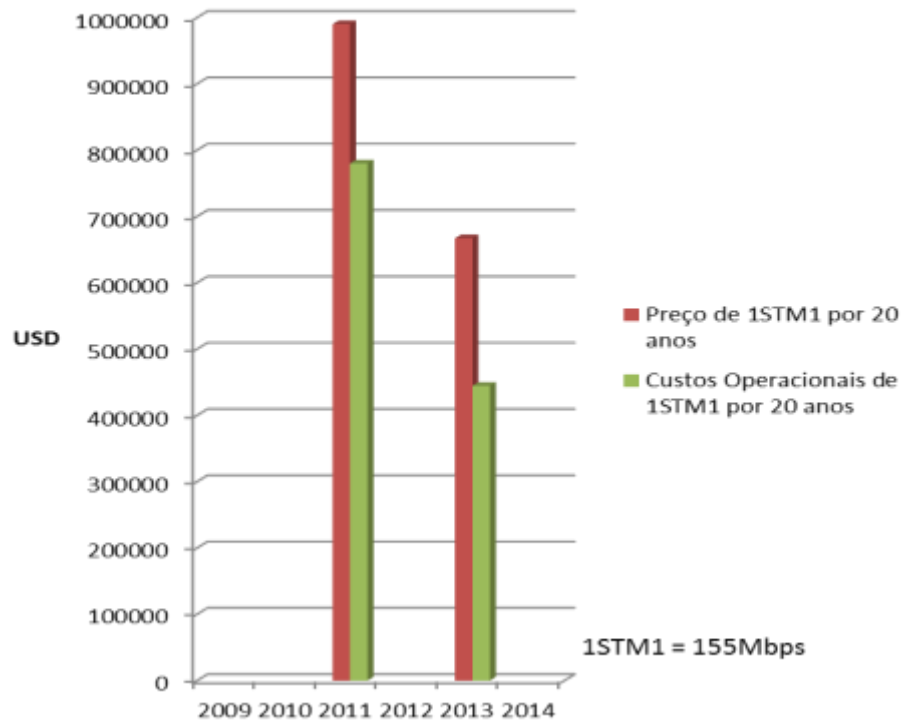
Being Implemented by Movitel



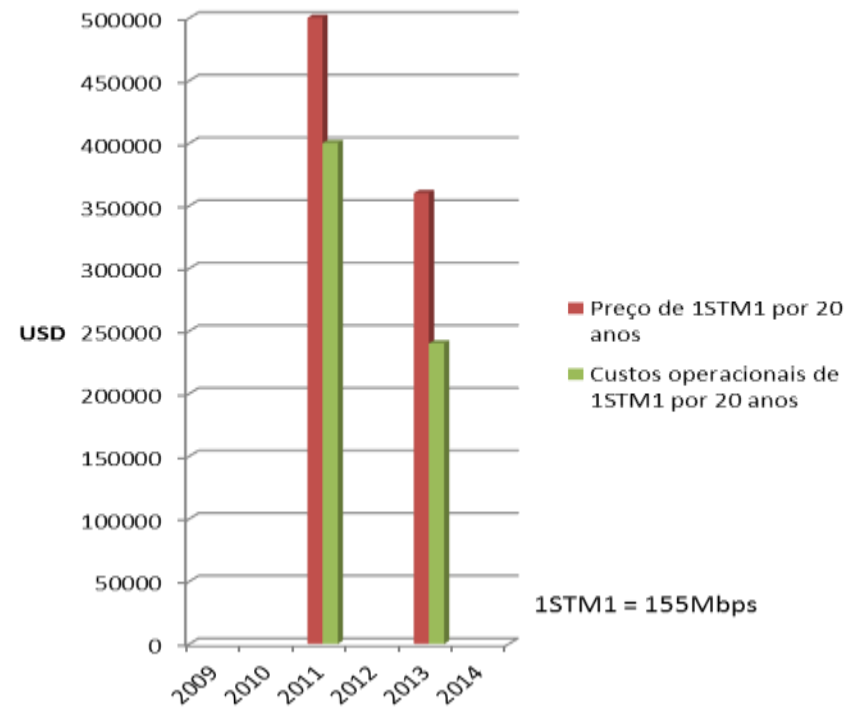
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Benefit of MoRENet: Reduction of Costs

Preços de Largura de Banda em Cabos Submarinos Internacionais



Preços Educacionais de Largura de Banda em Cabos Submarinos Internacionais



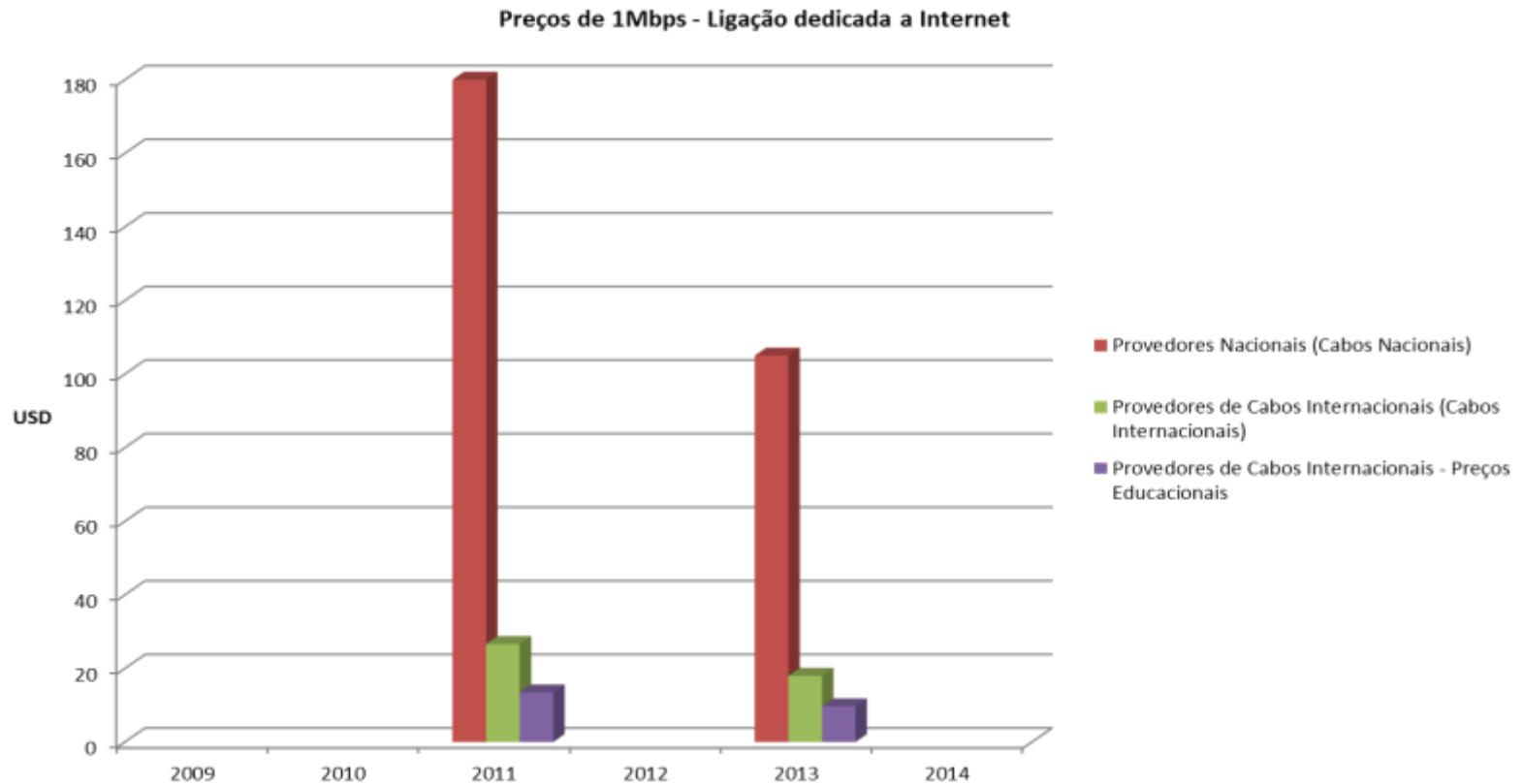
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Benefit of MoRENet: Reduction of Costs



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Lessons Learned

- **Ownership:** Sense of ownership of the Government and beneficiary institutions
- **Funding:** Contribution of the beneficiary institutions is critical for the sustainability of the MoRENet.
- **Government support is essential:** in the case of MoRENet all the developments so far are funded and driven by the Ministry of Science and Technology, Higher and Technic Professional Education
- **National Policies:** The link with national development and ICT policies and strategies is important. In the case of MoRENet it is enjoying government support by being one of the ICT Implementation Strategy Projects



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Lessons Learned

- **International Cooperation:** Links and collaboration with other NRENs and regional and international Research and Education Networks is essential.
 - MoRENet has formal MoU with RNP (The Brazilian RNP) and informal collaboration with TENET, KENET.
 - MoRENet is a member of Ubutunet has benefited from the capacity building initiatives supported by Ubutunet and its international partners (AfricaConnect Project)
- **Human Resources:** Hiring and retention of qualified personnel for MoRENet is essential. This is one of the critical challenges of MoRENet.

Lessons Learned

- **Collaboration with Telecommunications service providers:** It is essential to explore its potential of negotiation power and securing better deals for the MoRENet and its beneficiary.
 - MoRENet has benefitted from the 80% discount for national broadband connectivity services; and
 - MoRENet has benefited from the educational prices (discounts) for international connectivity
- **Collaboration with Global IT service providers:**
 - Approaching global payers in the ICTs for content hosting;
 - Hosting of Applications for Educations purposes or targeted to the academic community



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Thank you for your attention



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