

JADE

A Telecommunications Cost Model

for

IvyPlus Telecom Group

May 2, 2002

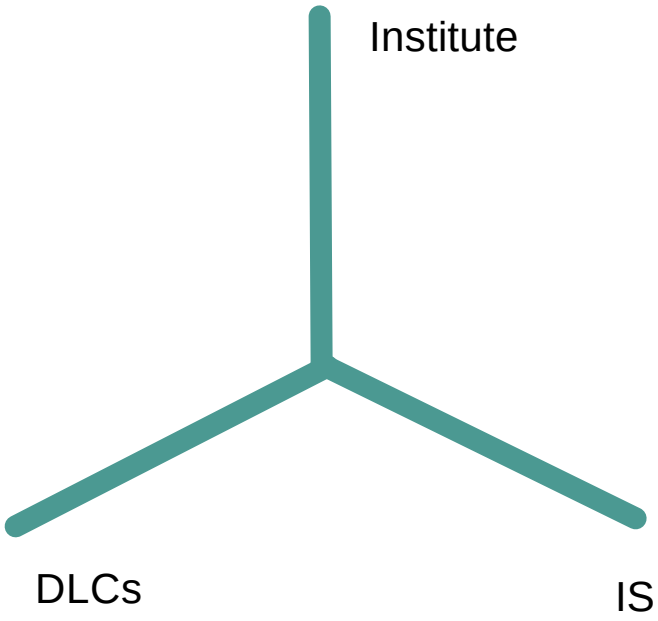
Dennis Baron

Massachusetts Institute of Technology

Topics

- Background - why the model was needed
- Generic cost model and Product Families
- Examples of cost allocation methodologies
- Output measures and product pricing
- Questions and answers

Context: A Triad of Interests

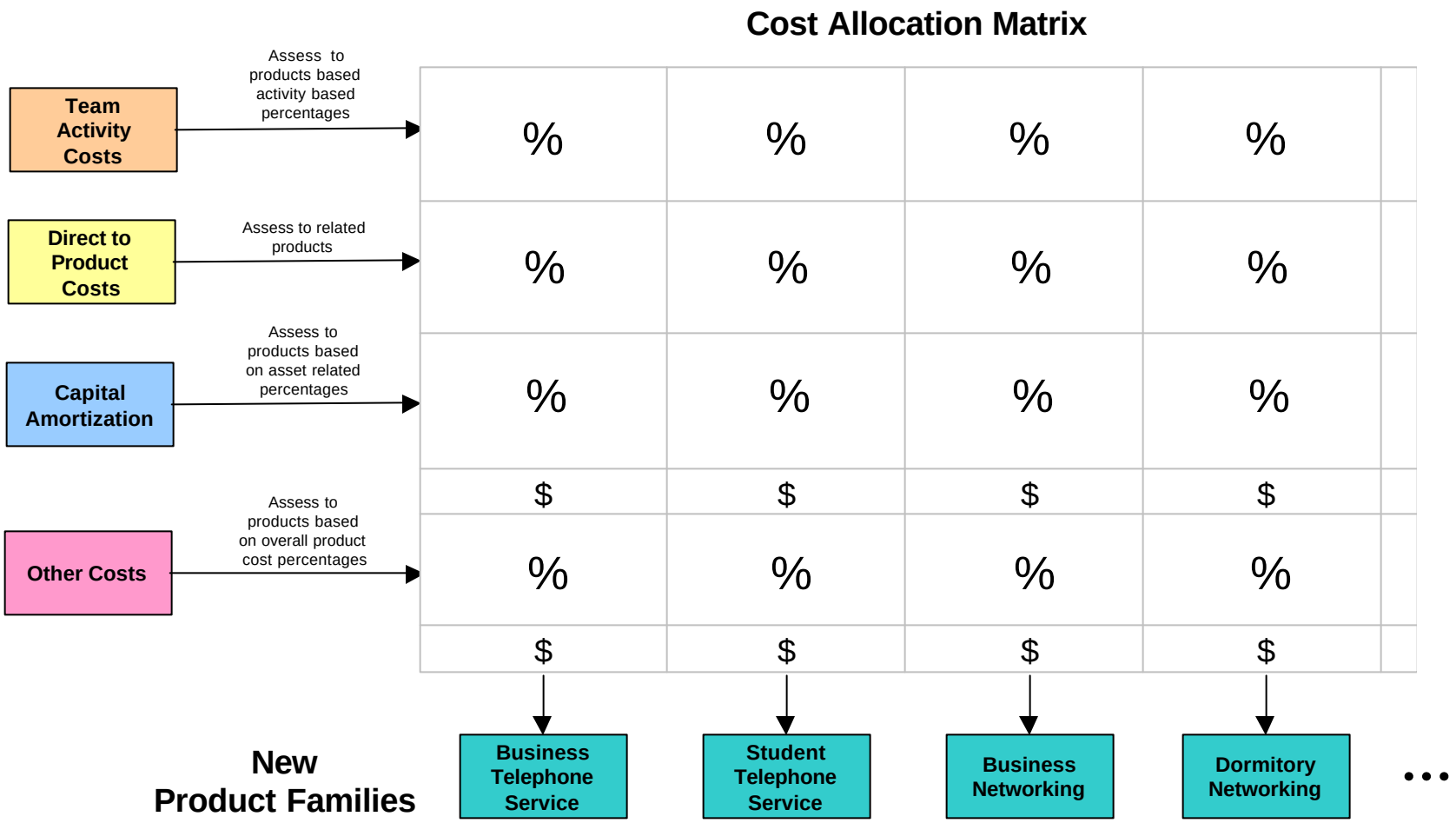


Institute
- Complies with Federal Regulations
- Complies with Institute policies
- Auditable
- Based on true cost of services
- Ensures effective cost recovery
- Ensures effective use of resources
- Ensures equitable access across the Institute
- Avoids subsidies and cross-subsidies

DLCs (Departments, Labs, and Centers)
- Affordable
- Stable
- Predictable
- Understandable

IS
- Scaleable
- Fully recovers appropriate costs
- Simple to administer
- Simple to explain

JADE Cost Model



Product Families

- Business Telephone Service
  Including ISDN and analog telephones
- Business Telephone Usage
  Including domestic and international calling and calling cards
- Student Telephone Service
- Student Telephone Usage
  “Local” usage bundled with monthly rates
  “Long Distance” usage outsourced
- Telephone Installation
- Circuits
  Copper and fiber
  Including installation
- Miscellaneous Carrier Services
  Including cell phones, pagers, telex and FAX and non-5ESS lines and usage

Product Families (continued)

- Business Networking
  Including individual hosts and private subnets
- Dormitory Networking
- FSILG Networking
  Fraternities, sororities and other independent living groups
- Network Installation
  Ethernet drop installation
- Tether
  Dialup PPP service
  Including start-up and overtime
- Jack Installation
  Dual 4-pair communications outlets
- Hourly Project Labor
  Billable hours only

Team/Product Family Matrix

Team Activity Costs / Direct Product Costs	Business Telephone Service	Business Telephone Usage	Student Telephone Service	Student Telephone Usage	Telephone Installation	Business Networking	Dormitory Networking	FSILG Networking	Network Installation	Tether	Circuits	Mscellaneous Carrier Service	Jack Installation	Project Hourly Labor
5ESS Service														
Network Operations														
Network Security														
VDIST HQ														
VDIST Installations														
VDIST Projects														
5ESS Support														
Telephone Operators														
Computing Help Desk														
Athena/RCC Help														

Team Templates

- Team Name and Cost Center
- Purpose
- Vision
- Customers
- Work
  - What is the work done by the team?
  - Measures quantifying the work done
- Resources
  - Staffing requirements for team's work
  - Other resources required for team's work
- Budget
  - Salaries and Benefits
  - Amortization
  - Equipment
  - Materials and Services
  - Software

Team/Product Cost Assessment Example

Network Operations		Business Networking	Dormitory Networking	FSILG Networking	Tether
Activities					
Maintain Backbone	60%	66%	18%	10%	6%
Maintain Servers	30%	66%	18%	10%	6%
Maintain Tether	10%				100%
Direct to Products					
External Connectivity	$	65%	18%	7%	10%
Tether Trunks	$				100%
Backbone	$	65%	18%	7%	10%
Building Service	$	72%	20%	8%	
Remote Sites	$	20%		80%	
Servers	$	65%	18%	7%	10%
		$	$	$	$

Asset/Product Family Matrix

Capital Amortization	Business Telephone Service	Business Telephone Usage	Student Telephone Service	Student Telephone Usage	Telephone Installation	Busienss Networking	Dormitory Networking	FSILG Networking	Network Installation	Tether	Circuits	Mscellaneous Carrier Service	Jack Installation	Project Hourly Labor
5ESS Switch														
Voice Mail System														
Outside Plant														
Building Plant														
Station Equipment														
MITnet Backbone														
MITnet Building														
MITnet Remote Sites														
Tether														

Other Costs

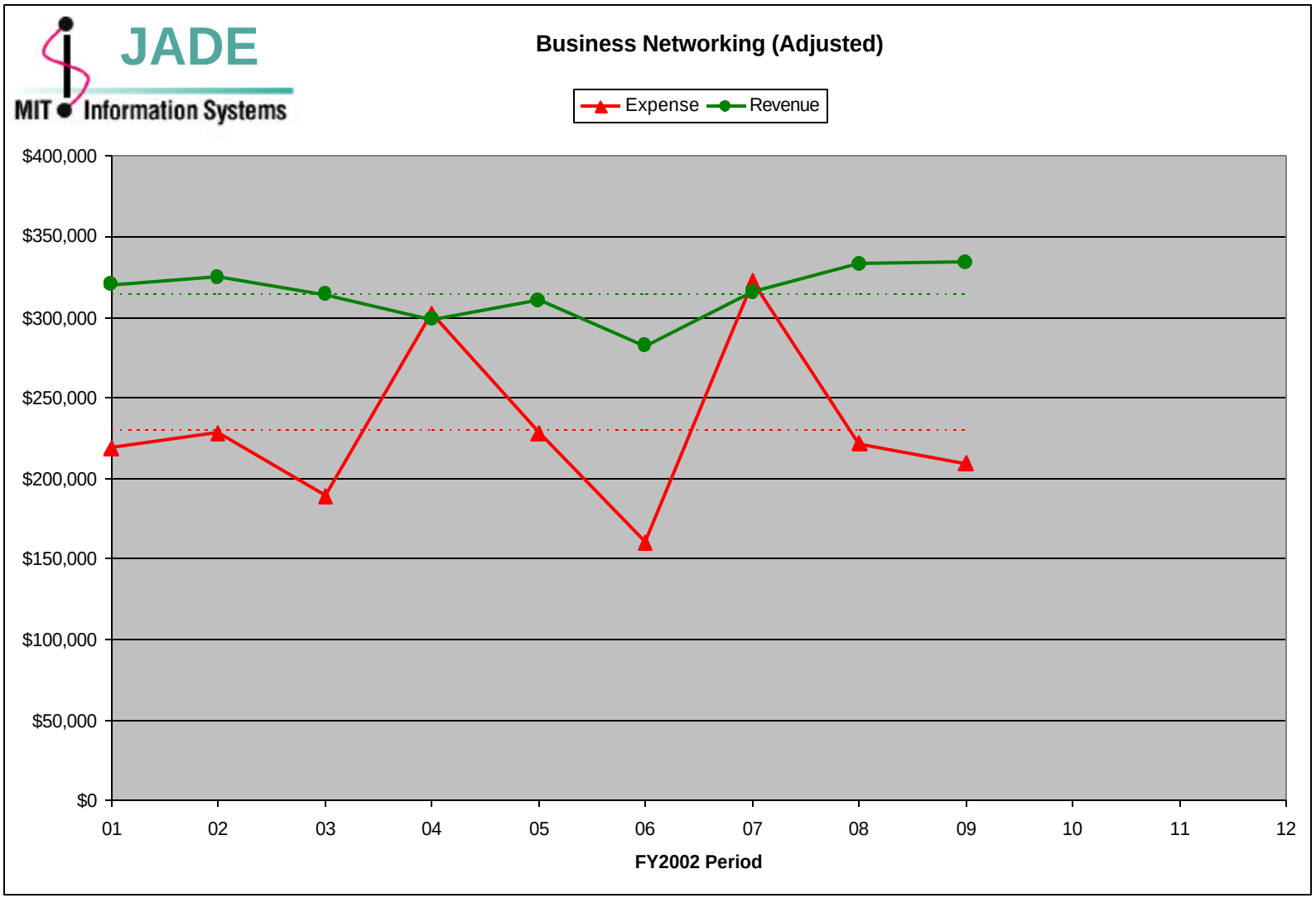
Other Costs

- Overhead Teams allocated based on distribution of Team Activity and Direct to Product costs
  - Site, Administrative, and Finance Teams
  - Administrative computing costs
  - TNS Headquarters
- Interest charges allocated based on distribution of Asset Depreciation costs

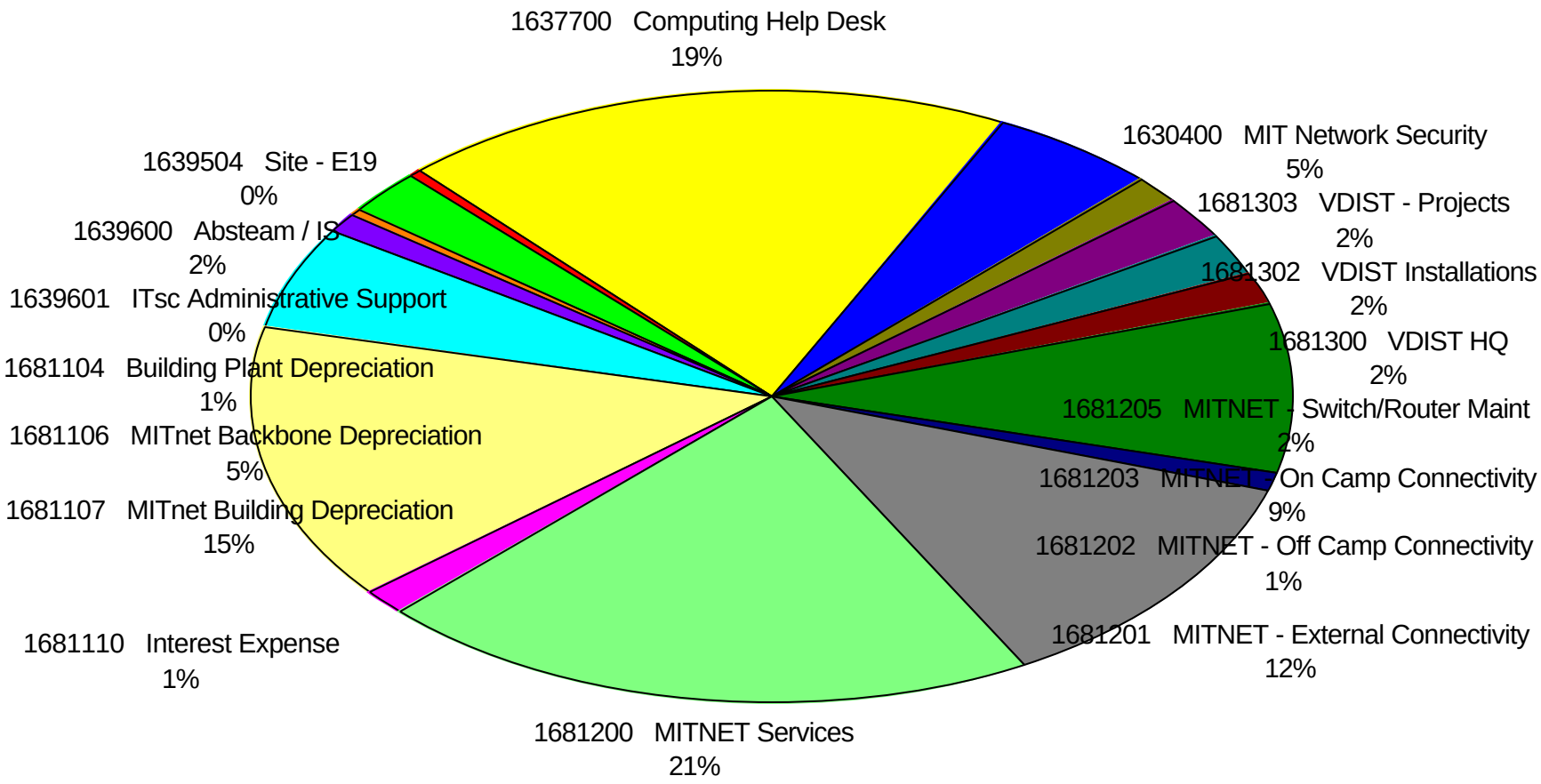
JADE Cost Assessment Rules

		Cost Center	1645400	1645410	1645420	1645430	1645440	1645450	1645460	1645470	1645480	1768800	1768810	1768820	1645490	1768830
Cost Center	Cost Center Name	Product Family	Business Telephone	Business Usage	Student Telephone	Student Usage	Telephone Installation	Business Networking	Dormitory Networking	FSILG Networking	Network Installation	Tether	Circuits	Miscellaneous Carrier Services	Jack Installation	Project Hourly Labor
Support Process																
1637400	Athena / Rcc Help								52%	1%						
1637410	Dormitory Networking Expense								100%							
1637700	Computing Help Desk							44%				9%				
Telephone & Network Process																
1630400	MIT Network Security							67%	23%	10%						
1637100	Telephone Operators		23%	67%	3%	7%										
1637101	TO-Automated Attendant		82%		18%											
1637200	5Ess Support		20%	12%	5%		53%							7%	3%	
1637201	5E Supp-Business Usage			100%												
1637202	5E Supp-Student Usage					100%										
1637203	5E Supp-Circuit Vendor												100%			
1637204	5E Supp-Miscellaneous Carrier													100%		
1637205	5E Supp-Emergency Telephones		82%		18%											
1681200	MITtnet Services							66%	18%	10%		6%				
1681201	MITnet-External Connectivity															
1681202	MITnet-Off Campus Connectivity															

Product Family Revenue/Expense Chart



Product Family Expense Chart



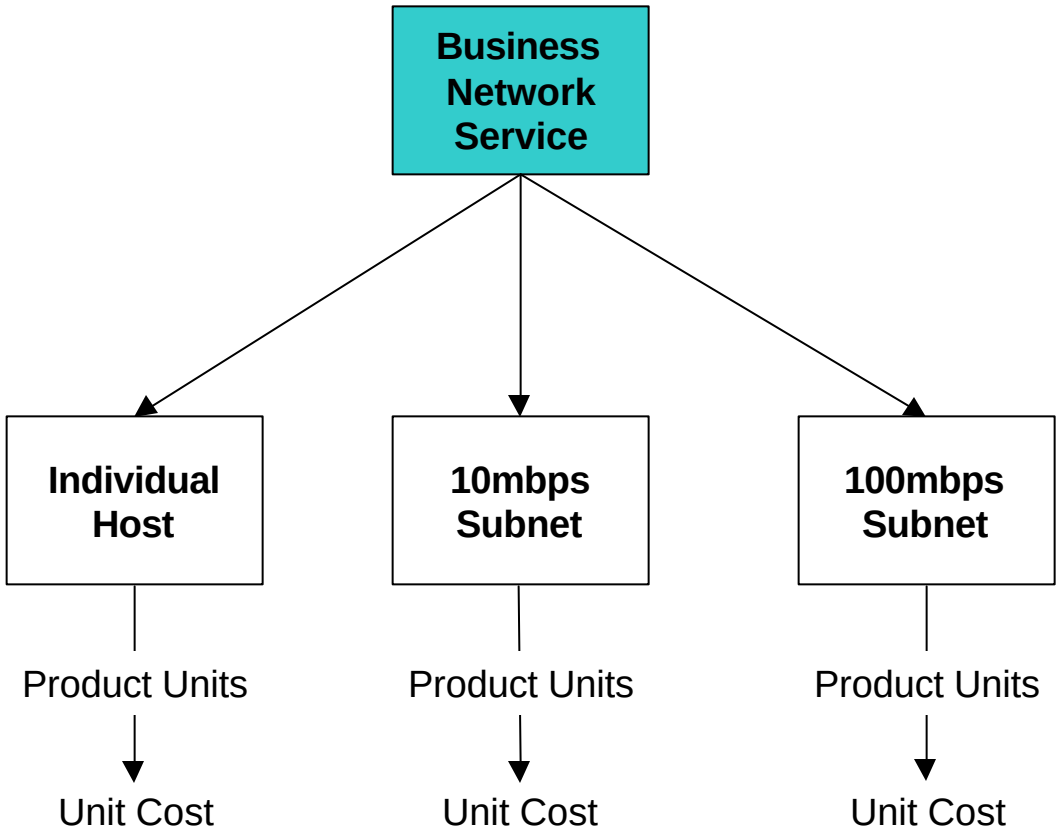
1645450 Business Networking

Rate Setting Analysis

For each Product Family

- Primary Products
  - Rates are set based on cost
- Secondary Products
  - Rates are set based on Primary Product rates
- Other Products
  - Rates are set based on other factors

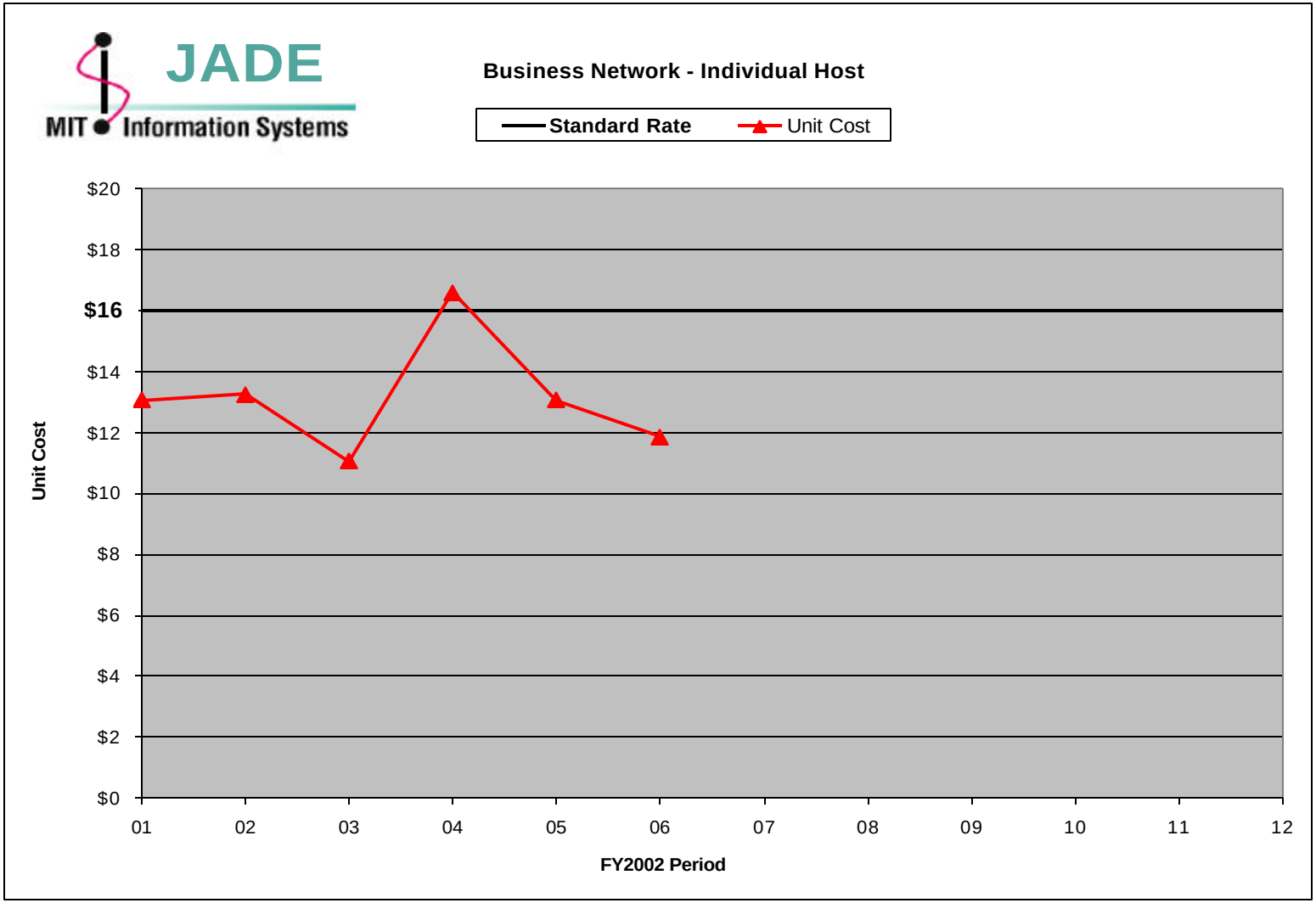
Product Family Example



Volume Data

- Telephone lines in service
  - Business, student
- Voice mail boxes in service
- Telephone and voice mail moves, add's, and changes
- Business telephone usage (minutes)
- Network addresses assigned
  - Business, dormitory, FSILGs
- Network drops in service and new installations
  - Business, dormitory
- Tether subscribers and activations
- Circuits
  - In service and new installations
- Jack installations
- Billable labor hours

Primary Product Unit Cost Chart



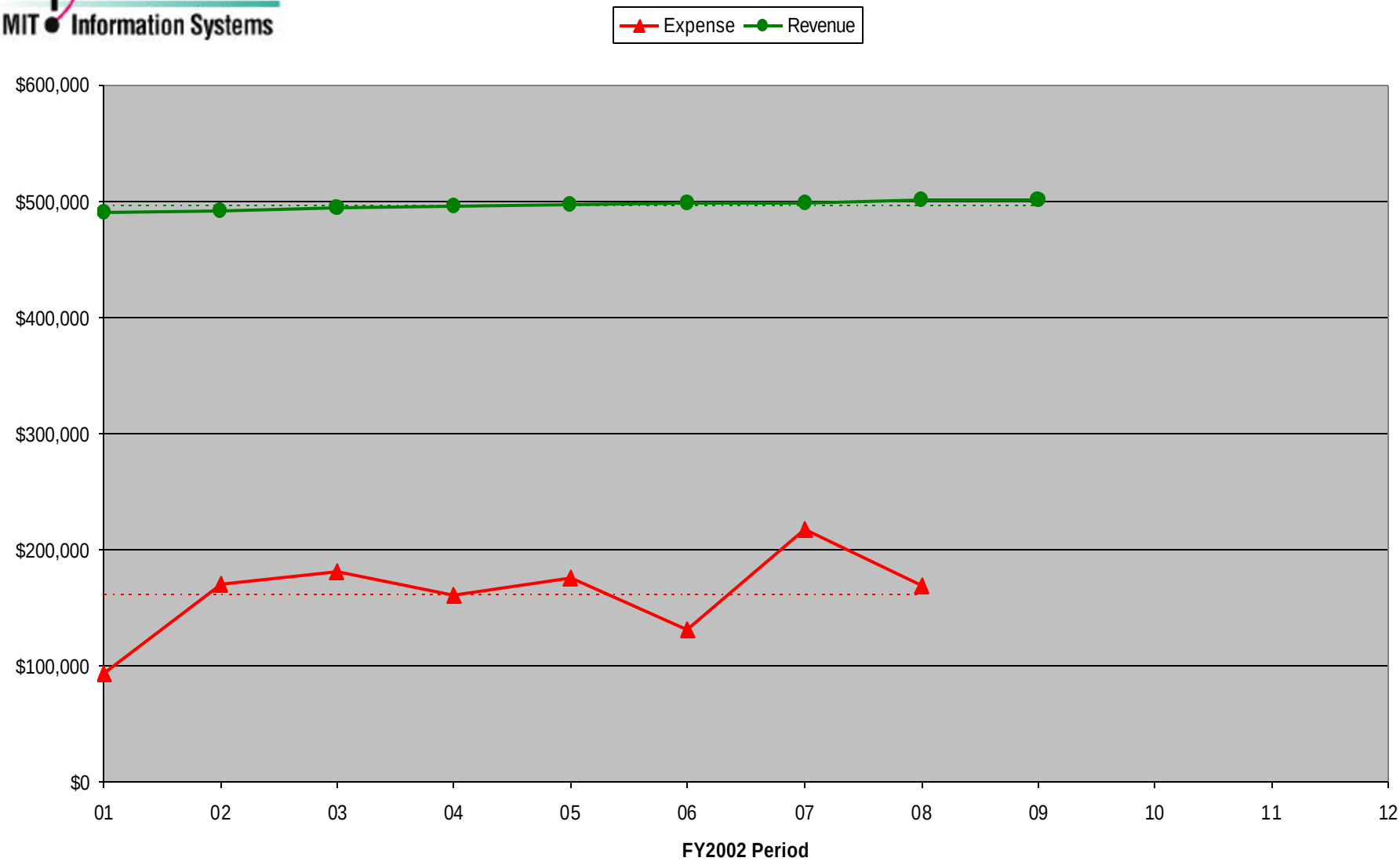


Questions?

Appendix: Product Family Charts

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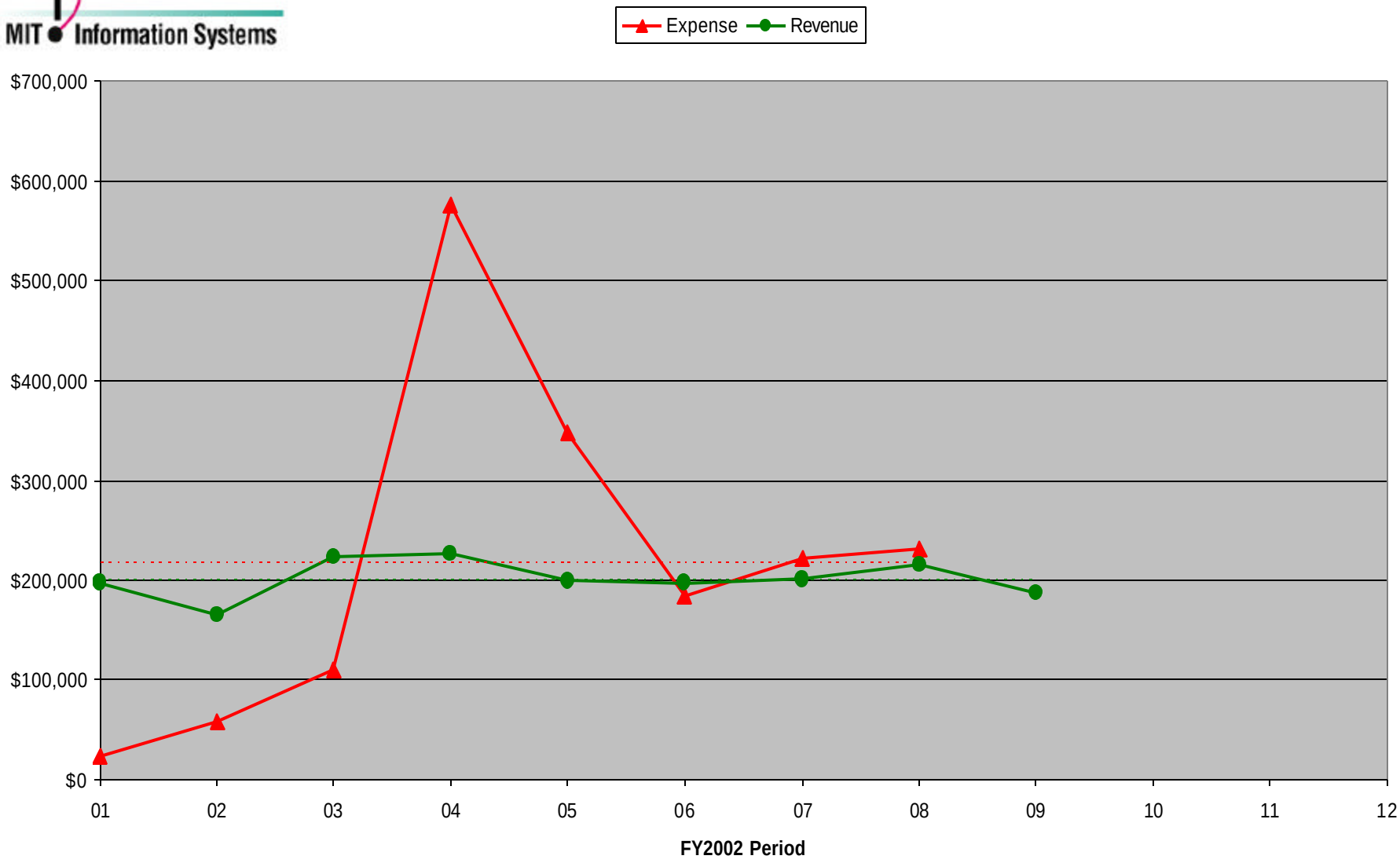
Business Telephone Service (Adjusted)



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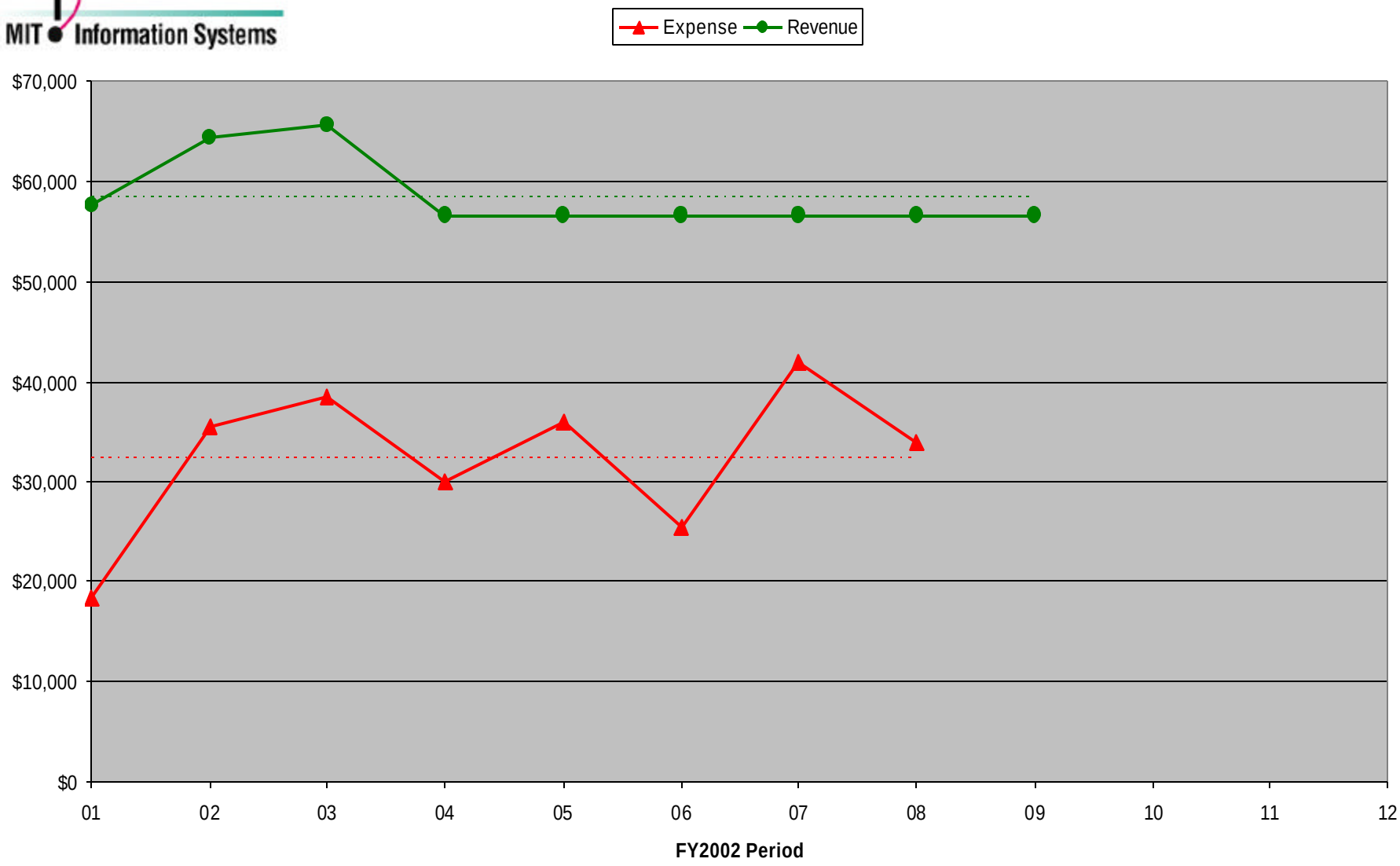
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Business Telephone Usage



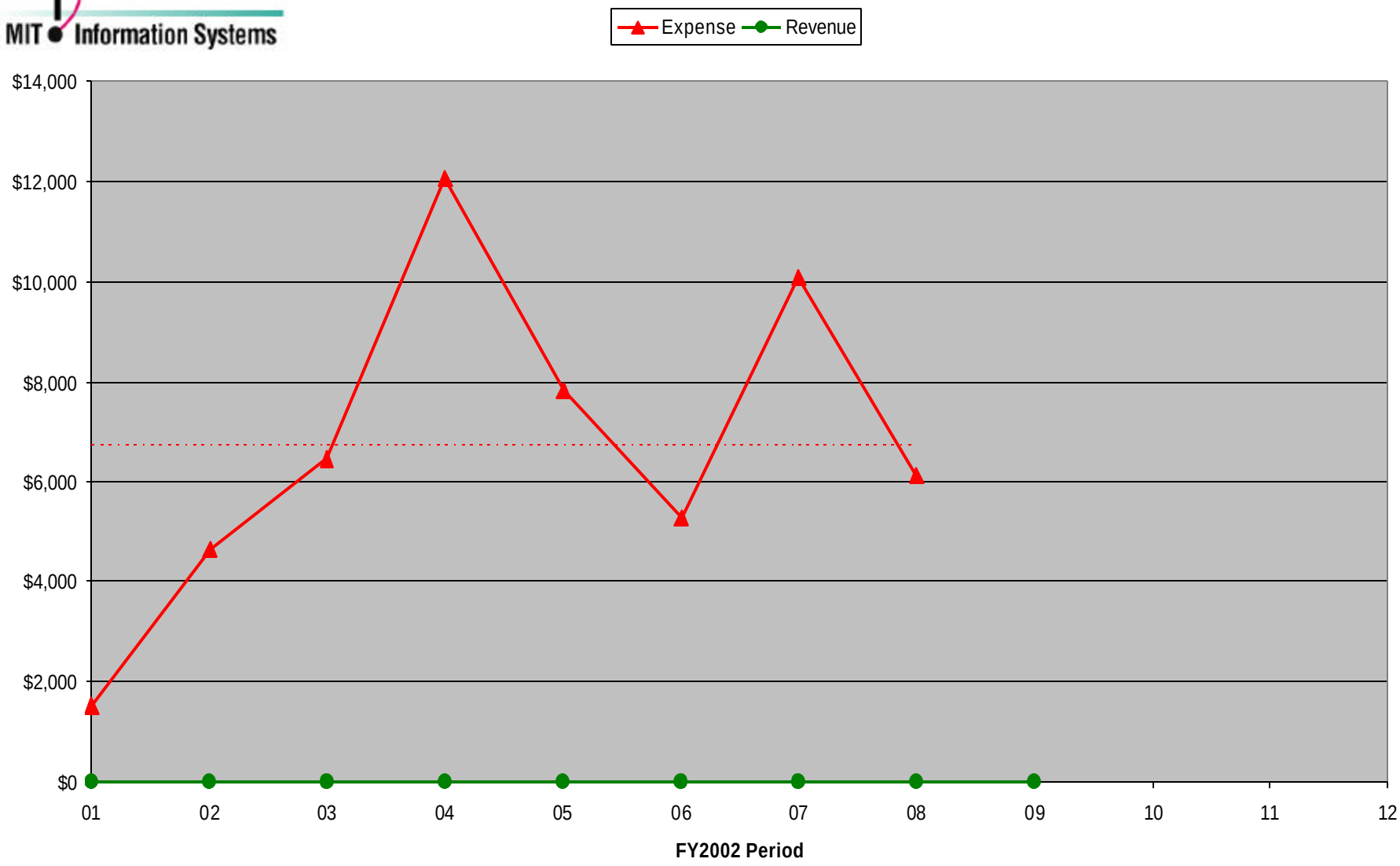
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Student Telephone Service (Adjusted)

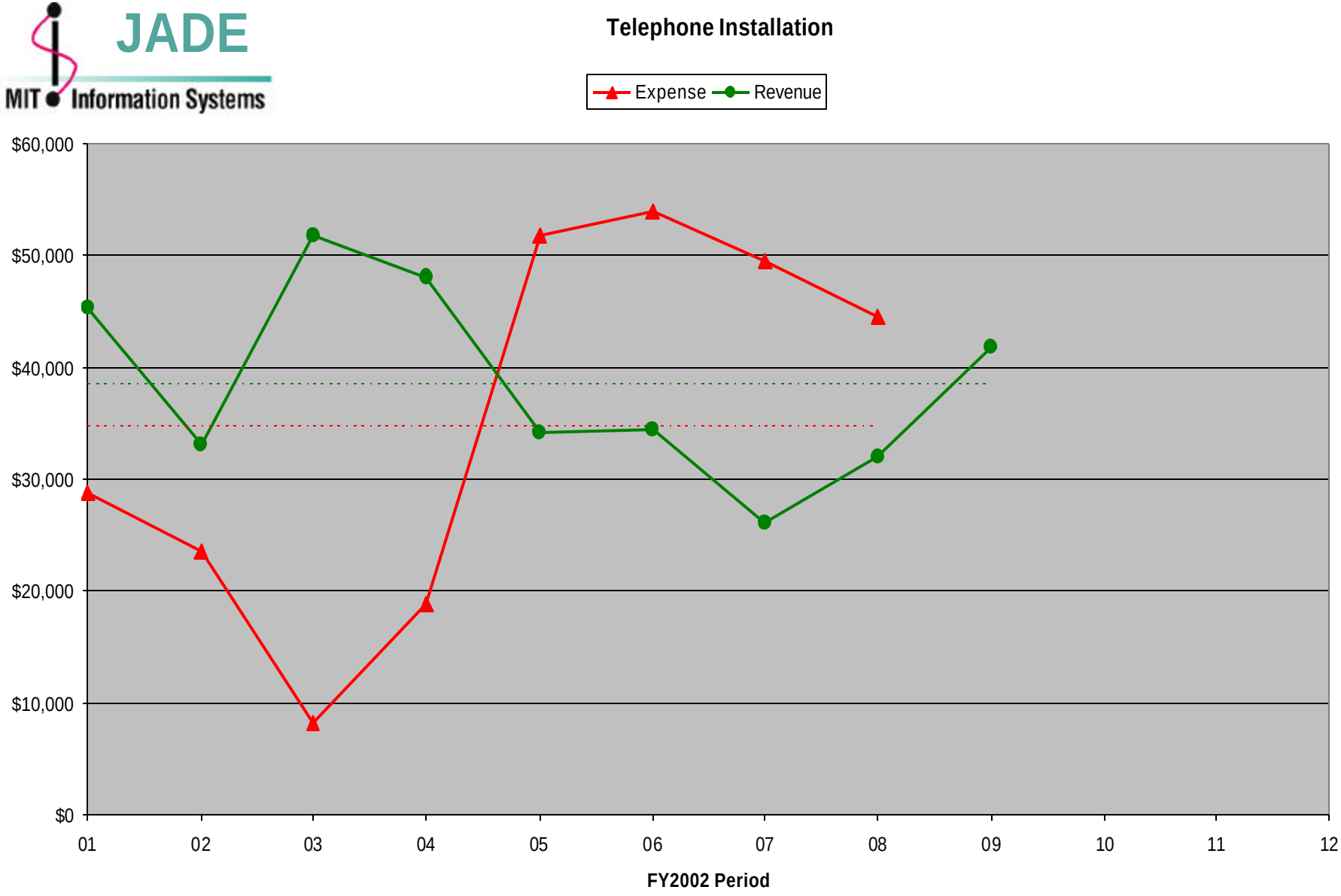


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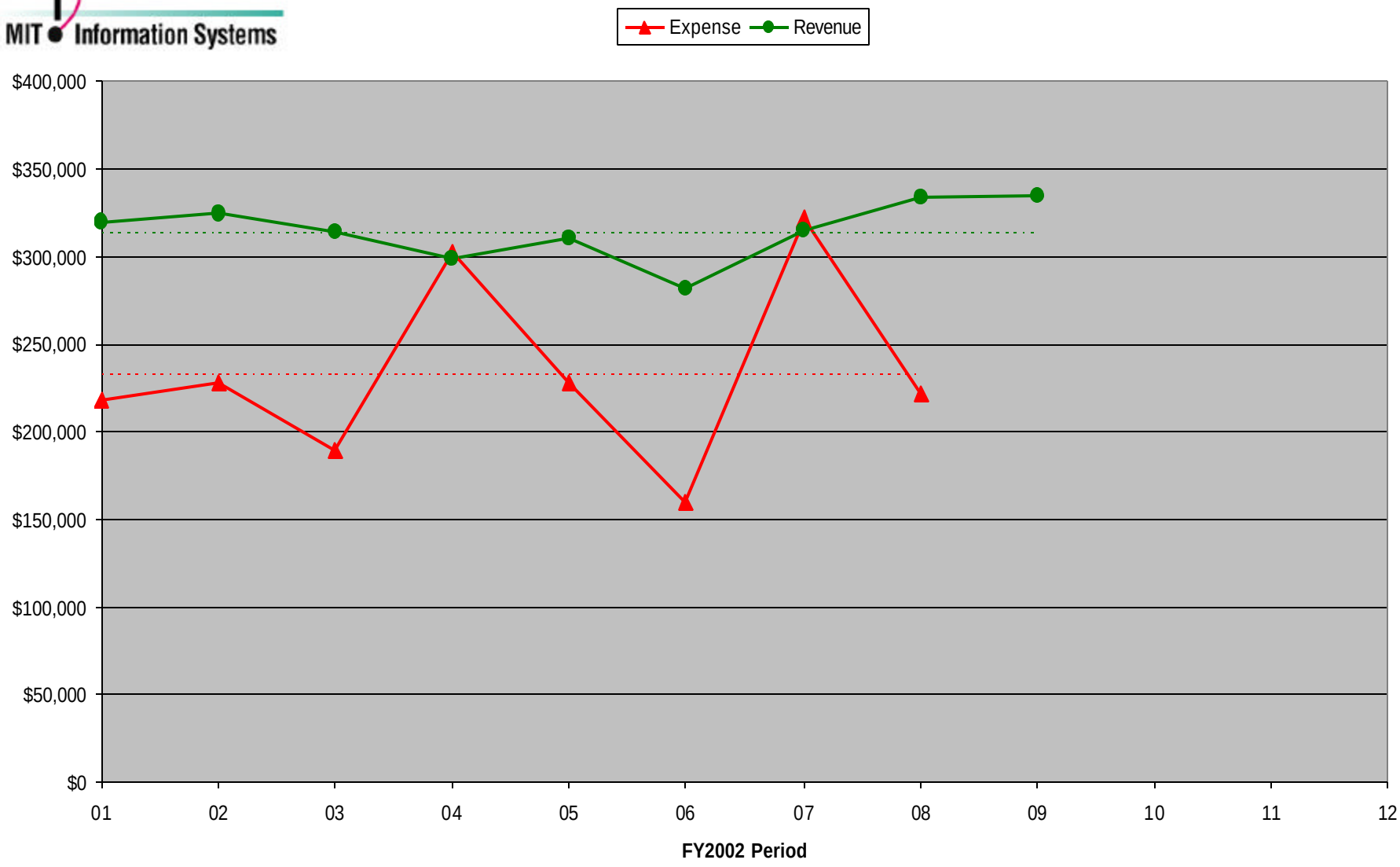
Student Telephone Usage



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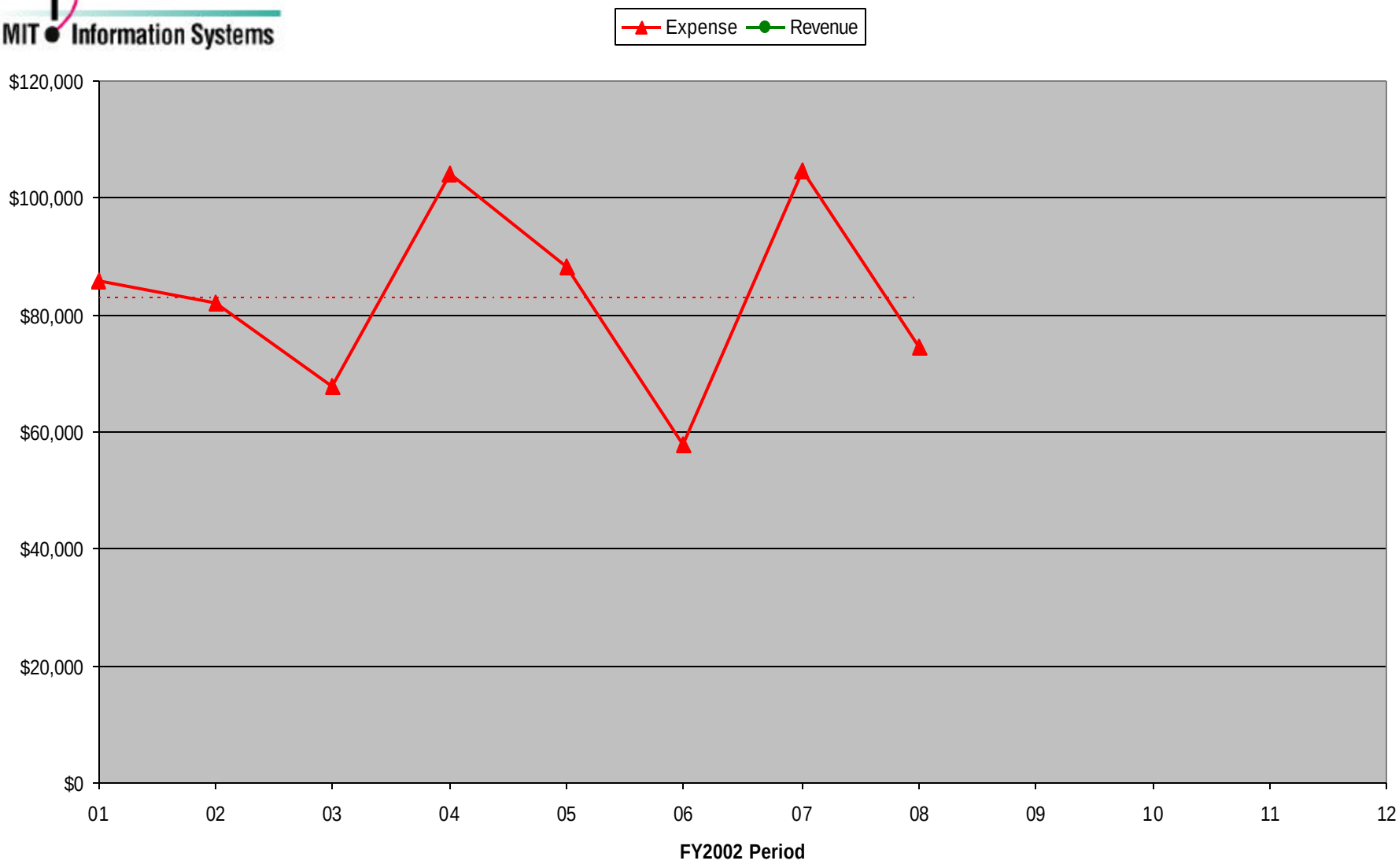


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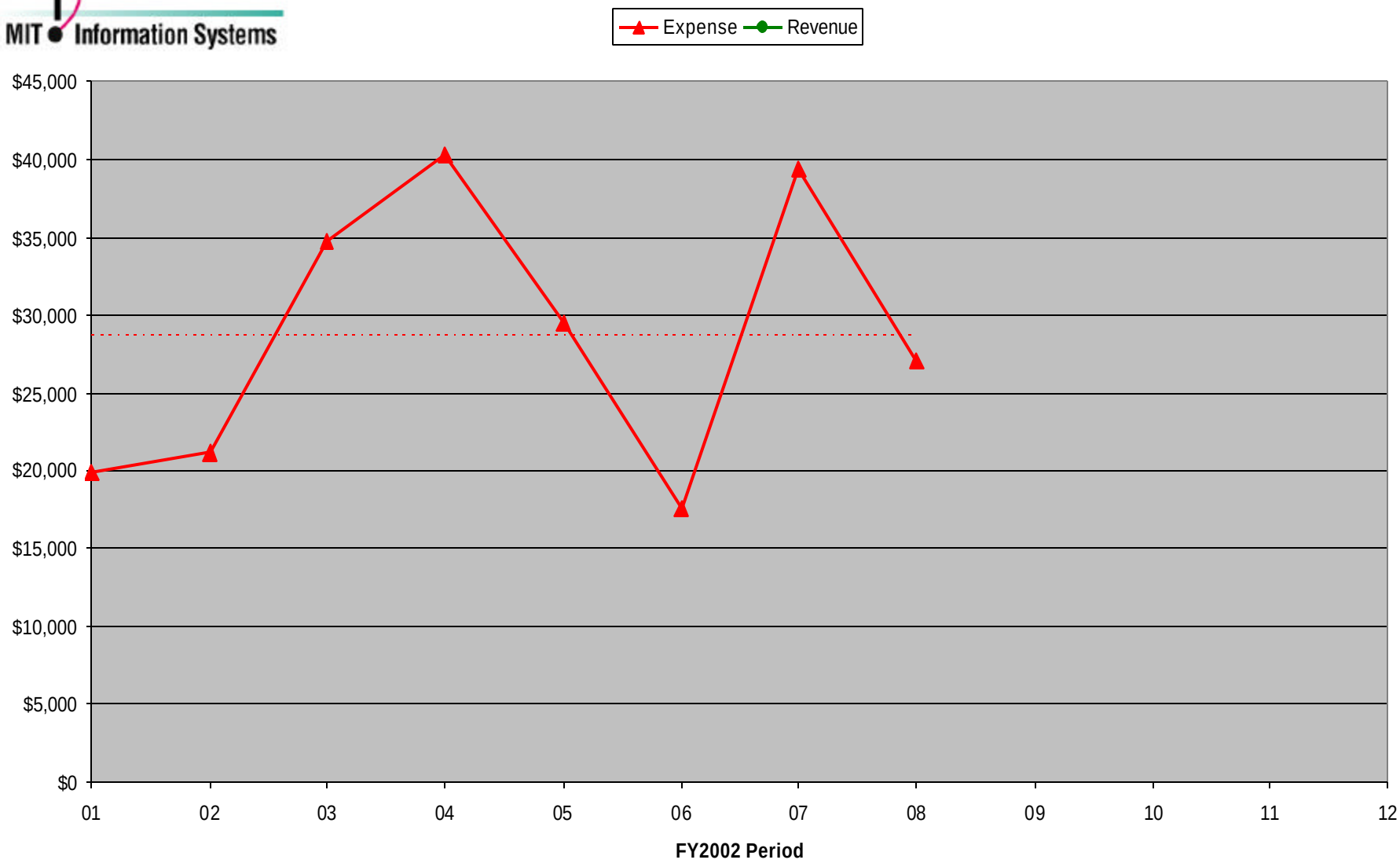


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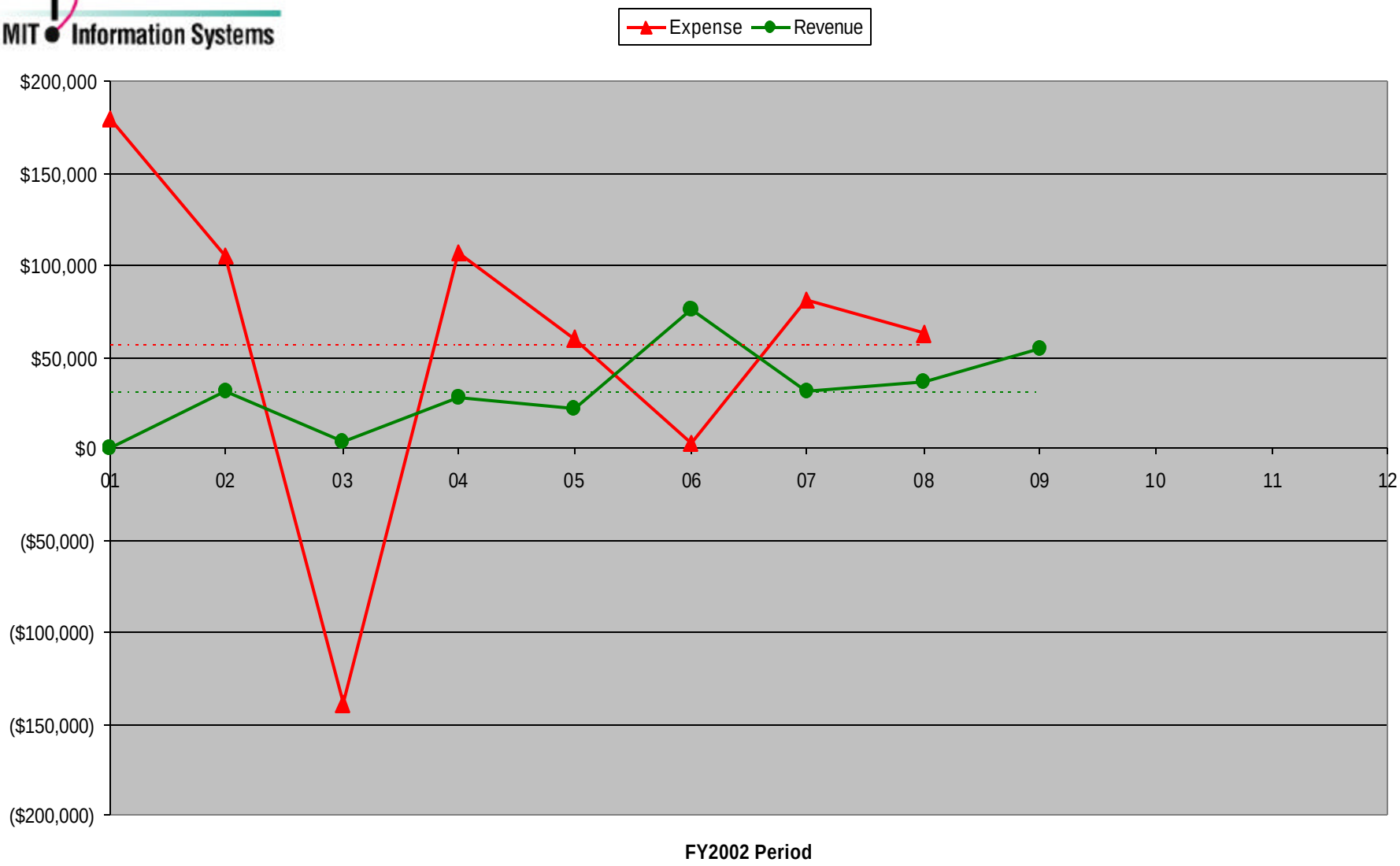
Dormitory Networking (Adjusted)



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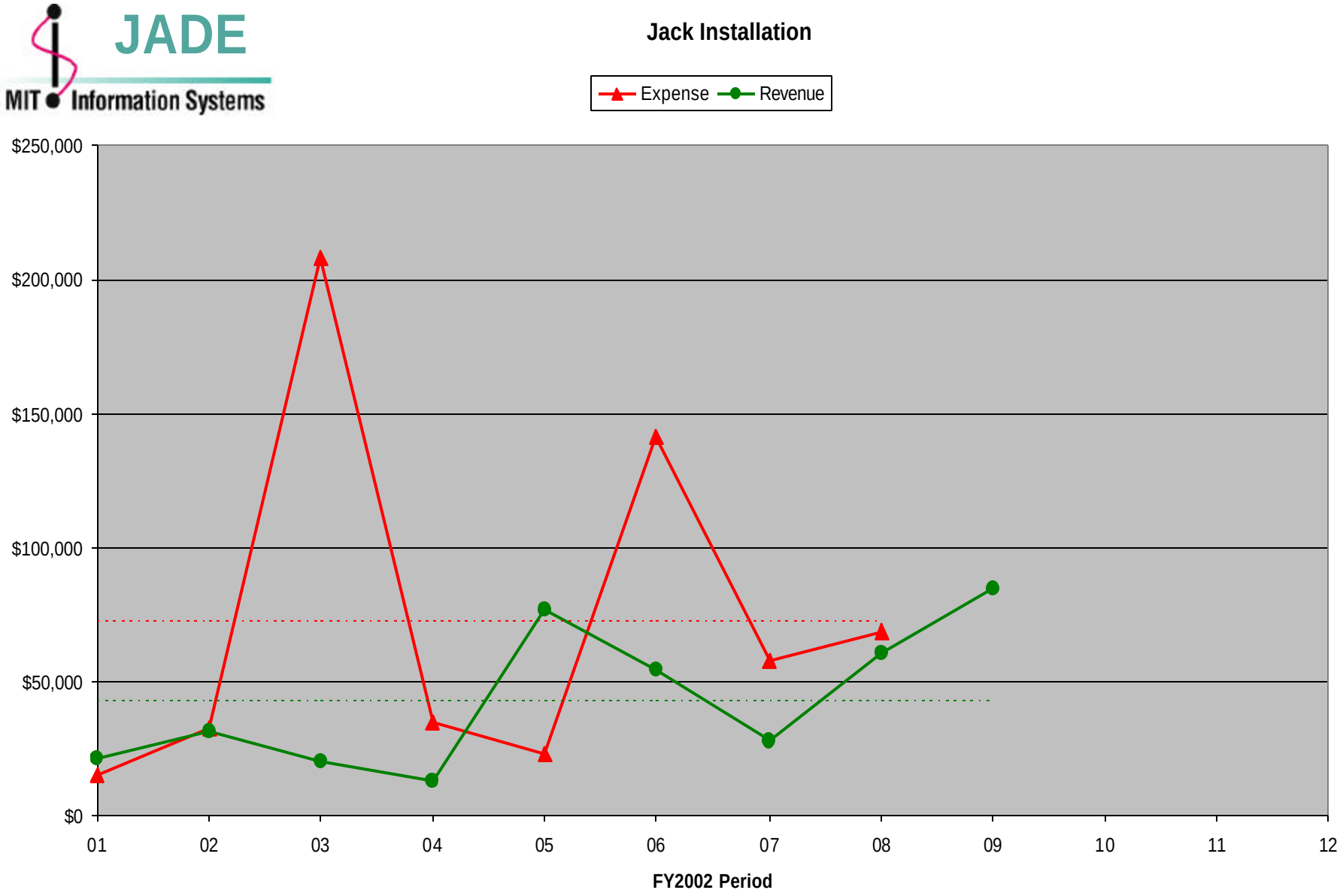


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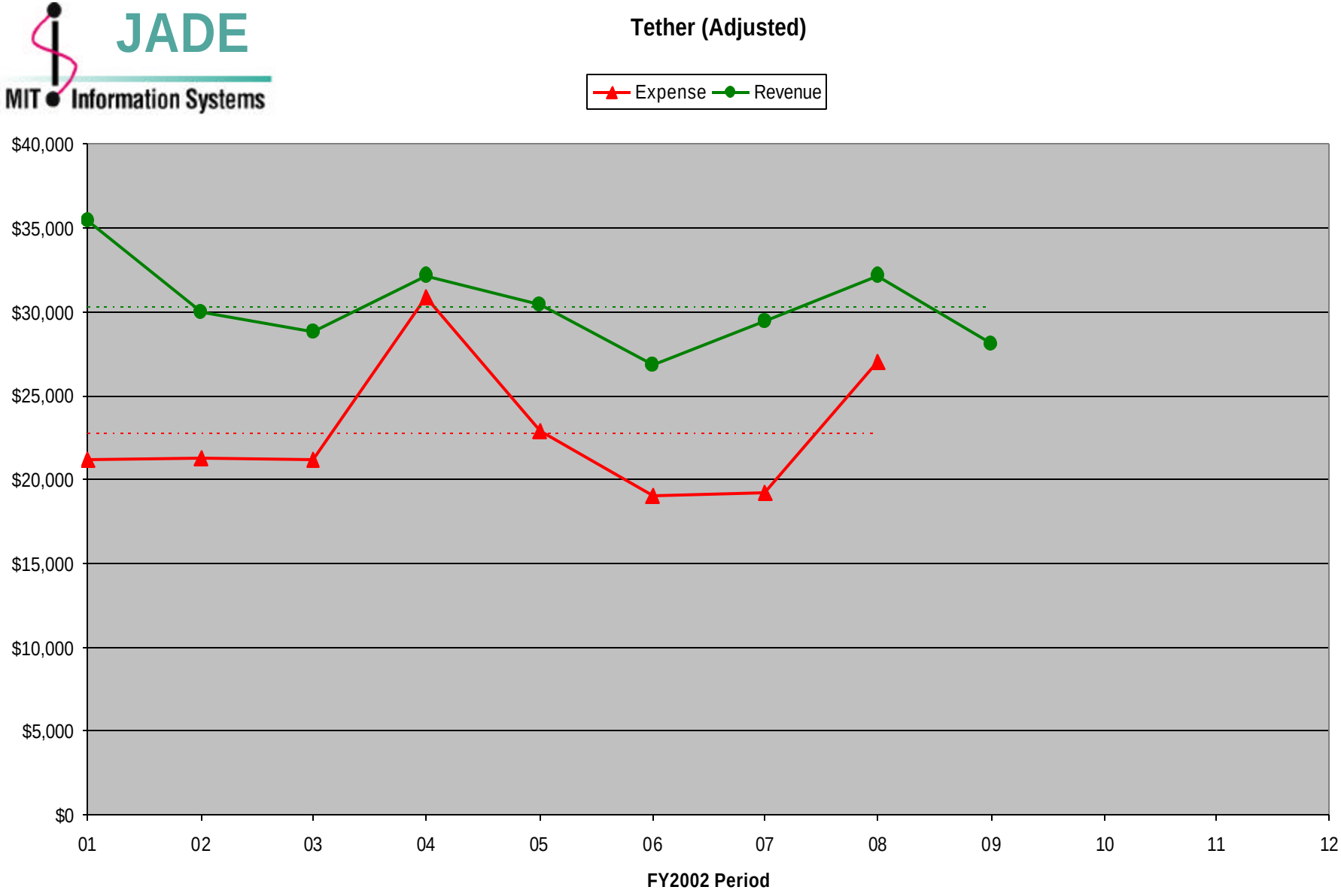
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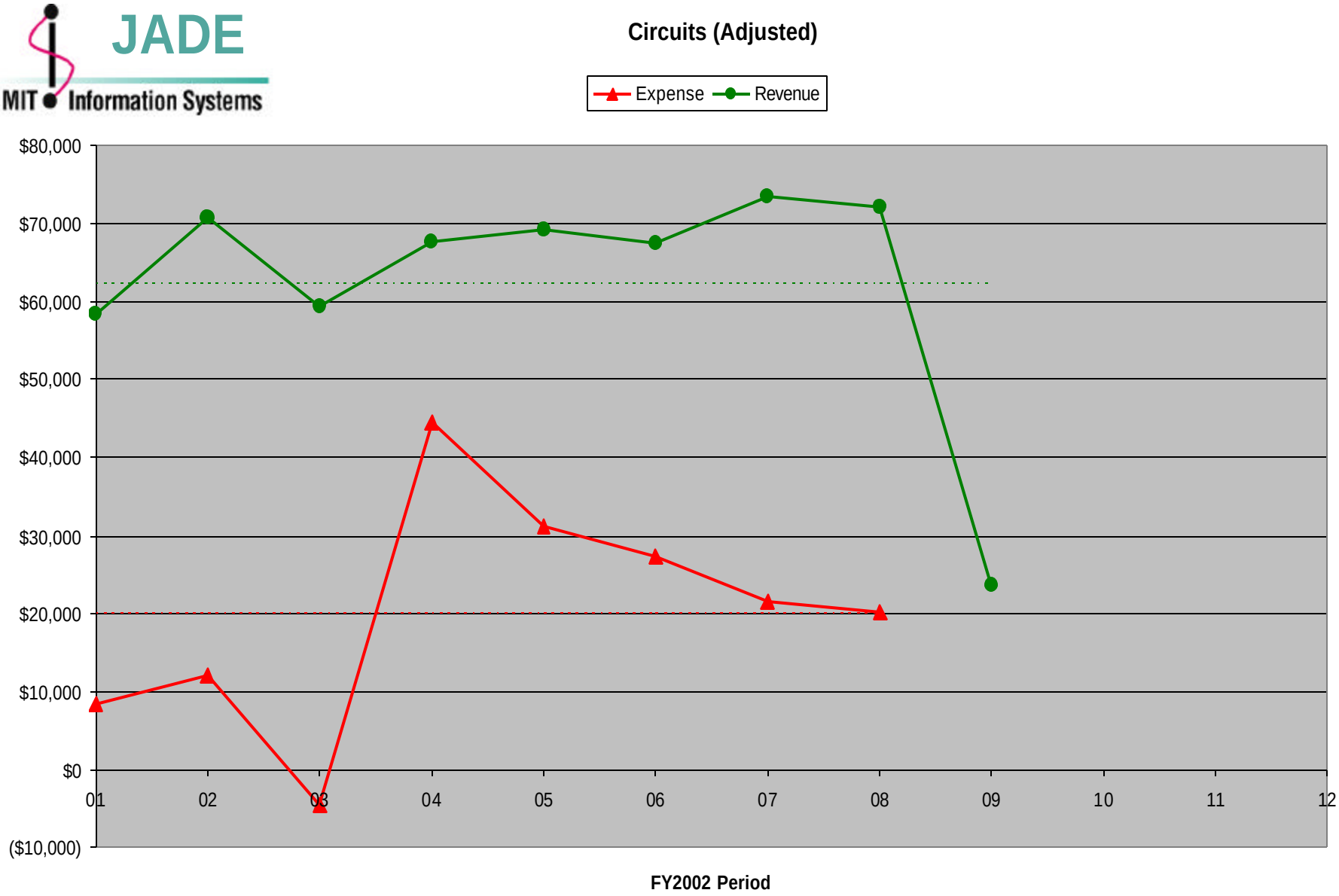


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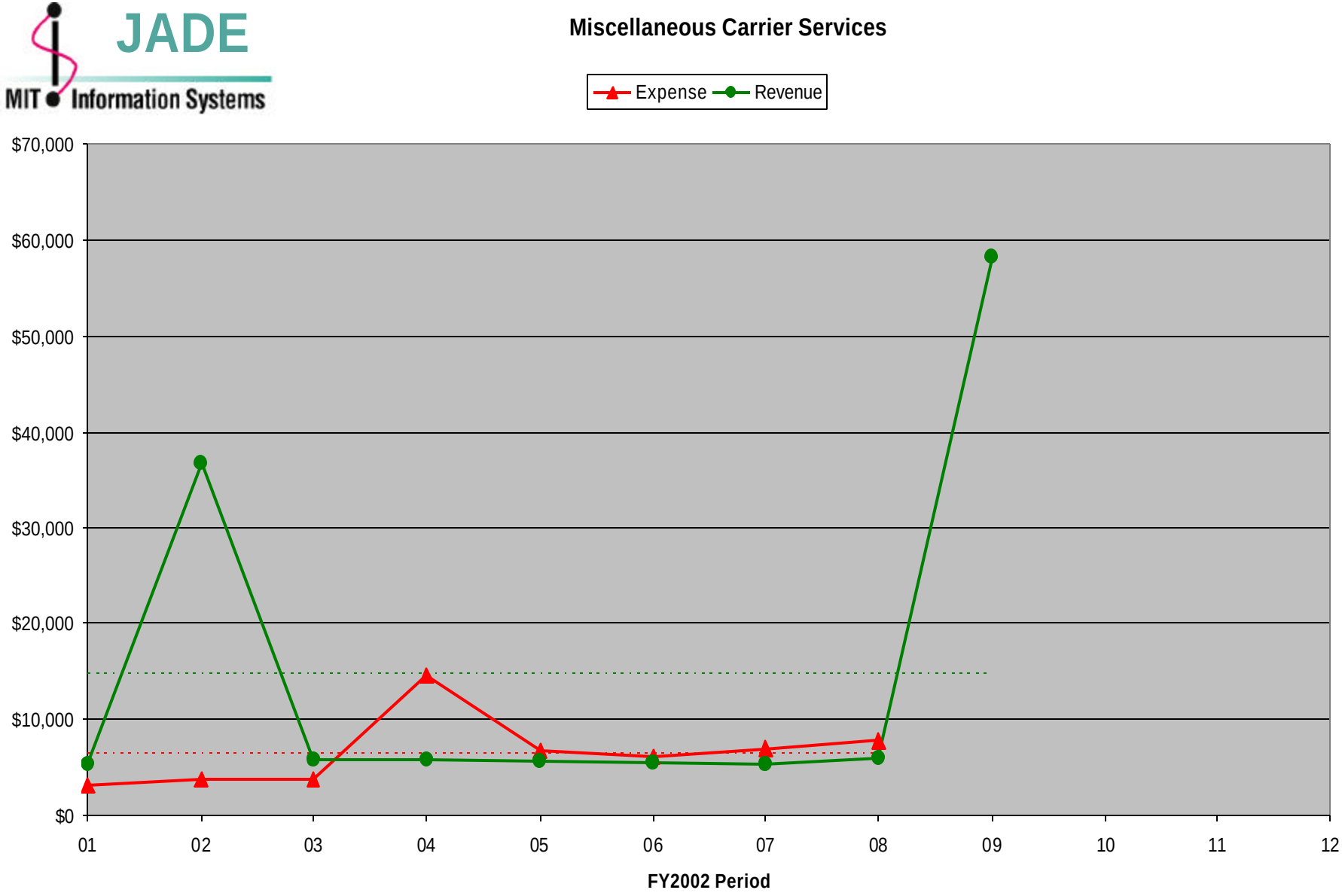
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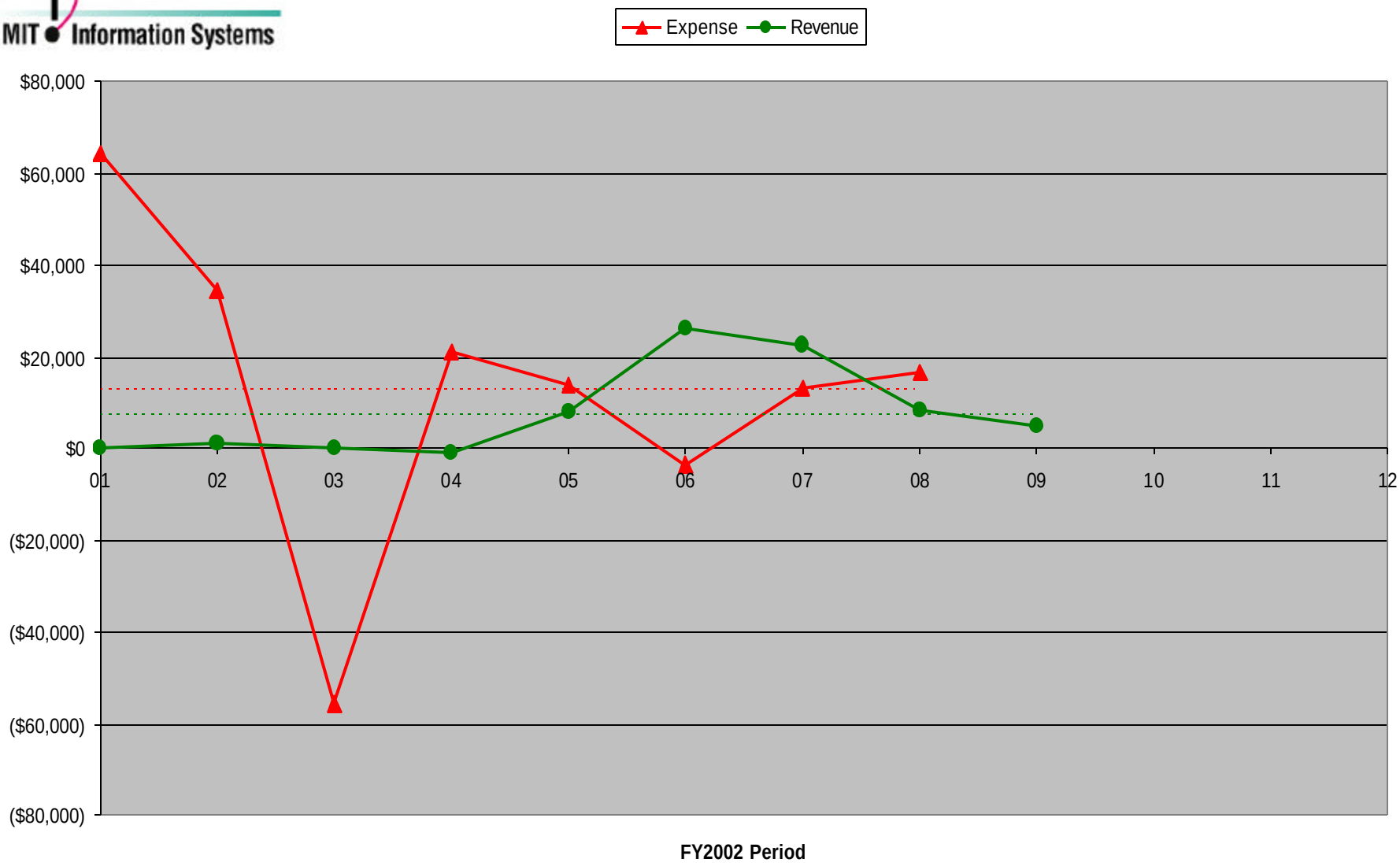


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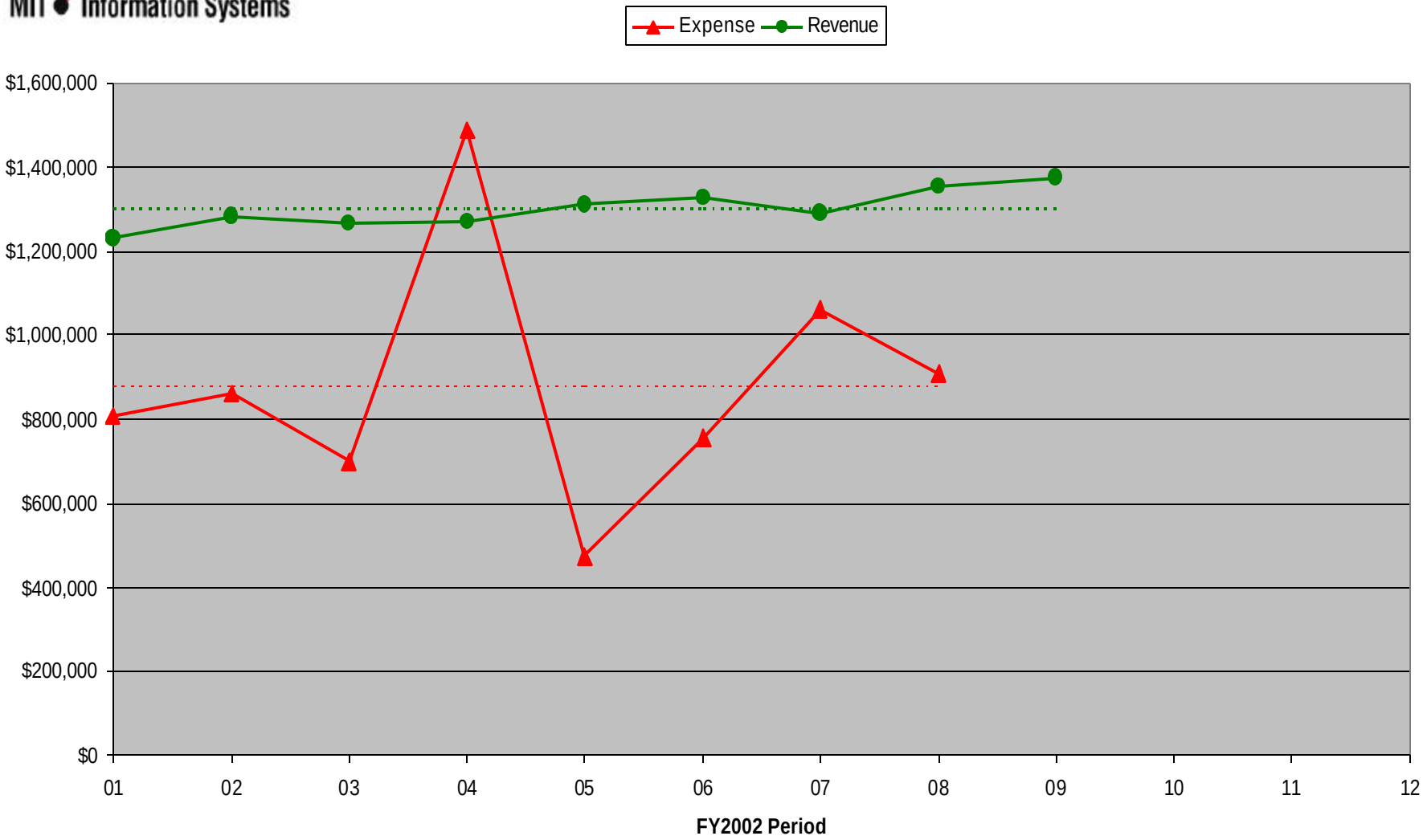
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Hourly Project Labor



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I/T Service Center Total (Adjusted)
(not including Dorm and ILG Networking)



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